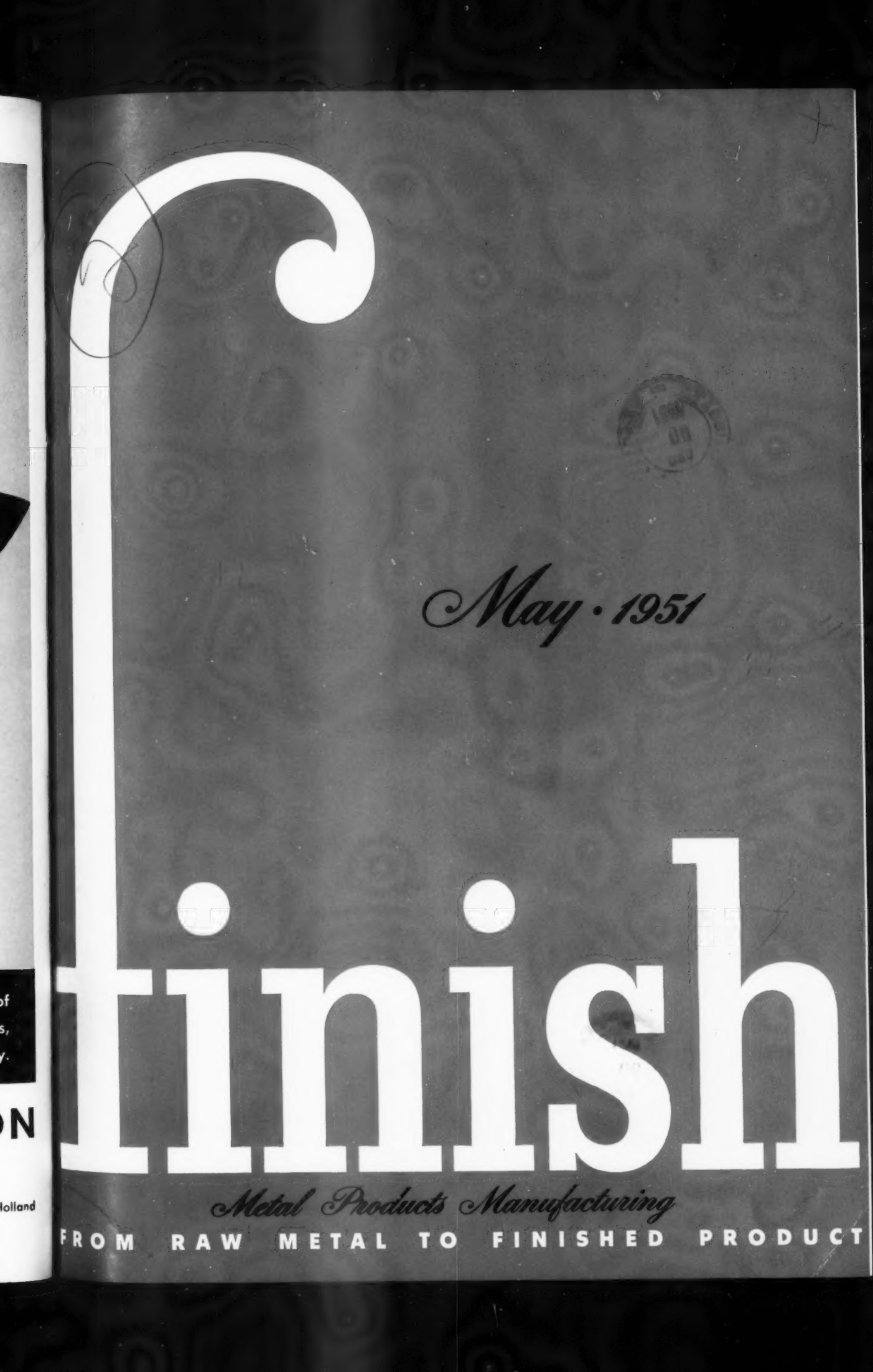
May · 1951
finish
Metal Products Manufacturing
FROM RAW METAL TO FINISHED PRODUCT

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"Ceramic" is now devoting much of its effort to testing and processing procurable raw materials for conversion into usable products.

If you have a problem which our experience and specialized laboratory and testing equipment can help solve — please feel free to call upon us for cooperation.

We are eager to help get maximum productivity from available supplies . . . and to find new means of converting procurable materials into usable ceramic products.

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Your customers, like ours, may understand the difficulties you face in supplying all their requirements. And your customers, like ours, appreciate — and remember — the supplier who maintains high quality standards at a time when almost "anything goes."

"Ceramic" is doing two things to help its customers keep their customers satisfied: (1) Every effort is being made, and will continue to be made, to meet the requirements of those who have depended on us in the past. (2) We are maintaining pretesting procedures that assure high quality so that our customers get the most production possible from available supplies, and so what they produce is true-to-specification.

WENNING CERAMIC COLORS TRADE MARK

CERAMIC COLOR & CHEMICAL MFG. CO.
New Brighton, Pa., U.S.A.

News from Washington

by Orville Johnson • (AS OF APRIL 14, 1951)

IT HAS BEEN announced by NPA that the long-heralded *Controlled Materials Plan* will take effect July 1. Steel, copper and aluminum — the three materials to be allocated under the system — will be doled out by NPA on a pound by pound basis for all direct military, "defense supporting," and essential civilian purposes. Makers of machine tools, street cars, and other essential civilian goods will be assured a sufficient supply of these important metals along with manufacturers of actual defense goods. What is left over after these demands are met will be available for non-essential civilian products.

The decision means that, starting with the third quarter of 1951, the CMP will be the "grand plan" for speeding production of military requirements and regulating other industrial output. The proposed system is patterned after that used during the last half of World War II. By adopting it now, the government aims to avoid the grade priorities system which led to such confusion and difficulty in the beginning days of the last war.

At the outset, at least, CMP will be "open ended" with no direct Federal allocation of the three key metals for non-essential civilian goods. Manufacturers in this category — principally those making durable consumer goods such as ranges, refrigerators, radios, and automobiles—will continue to scramble in the more or less free market for steel, copper, and aluminum after defense allocations are met.

How CMP will work

After the planners estimate the total production of steel, copper, and aluminum for the third quarter of 1951, the anticipated demand for these metals will be figured. The expected military requirements in terms of guns and equipment is to be translated into tons of steel, copper, and aluminum.

At the same time, producers of essential civilian goods like freight cars and ore boats will compute their tonnage needs of these allocated materials. These amounts, when finally approved, will be subtracted from the total supply. The remainder will be available for civilian use. Thus, a system will be established which can raise or lower the level of consumer production, depending on the urgency and extent of defense production, government officials say.

Present limitation orders will be re-examined and NPA will attempt to adjust them to that percentage of the base period that will permit each user to get his share of available metals. Every attempt will be made to hold to the present one-rating priority system rather than going to a multi-rating system.

The program should permit, say government planners, "reasonably high production of civilian goods," providing, of course, there is no global war.

The labor supply

Despite increasing layoffs showing up in industries making autos, farm machinery and other civilian goods, Labor Dept. officials predict an increasingly tight labor supply before the end of the year. Workers, made idle by materials shortages in civilian factories, soon will be absorbed by defense plants as we swing into production of tanks, guns and planes.

There will be temporary idleness and dislocations, government economists say, but they now expect the shift to arms production to result in less unemployment than appeared likely at the beginning of the year. As the defense program gains momentum, they expect labor shortages to increase, especially in the skilled and semi-skilled trades.

Government to contribute to cost of mineral search

New sources of strategic minerals can be searched for and mined, with the government contributing 50% to 90% of the costs. The Defense Minerals Administration sets forth (in Mineral Order 5) how it will help finance projects aimed to produce new sources of vitally needed ores.

The size of the government's contribution will vary with the mineral being prospected or processed. Projects searching for nickel, cobalt, tin and certain other especially critical ores will get 90% contributions. Copper, chromium, molybdenum and five other metals will get 50% support of the projects from the government. Government mineral planners hope that this government-private enterprise cooperative effort will result in discoveries which will help ease the critical shortage of certain ores.

WASHINGTON BRIEFS

• *Government construction and operation of its own arms factories is being considered* to turn out such items as guided missiles, machine tools for producing arms, and other armament goods. DPA Administrator Harrison has proposed this to Congress "to turn out products that would have no normal peacetime use."

• *Violators of production control orders* are to be dealt with more severely, said NPA head Fleishmann. He issued the warning in making public the results of a recent survey of business firm compliances with NPA directives. Of 300 aluminum fabricators checked, 96 were given a clean bill of health, 7 were cited for enforcement action. The rest are to be warned or investigated further.

• *Certificates of necessity for 396 plant expansion projects*, to cost $1.3 billions, were approved by DPA up to April 7. Rapid tax write-offs from 40% to 100% are allowed certificate holders.

• *Deliveries of new freight cars* in March rose to 7,011, an increase of 20% over February deliveries. This amount is still considerably below the 10,000 monthly goal authorized by NPA. Government officials feel production will climb up to 10,000 in May.

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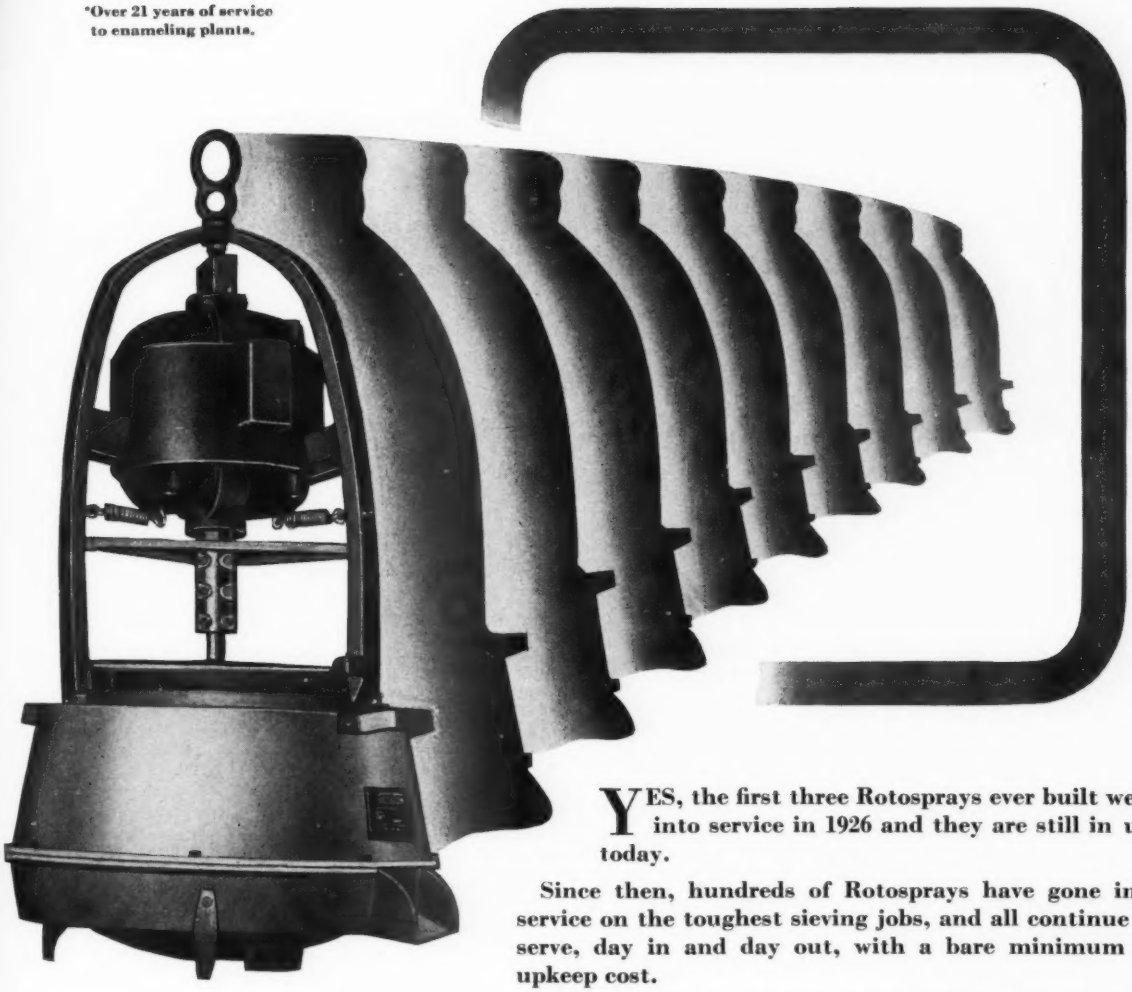
"THE WORLD'S FINEST" PORCELAIN ENAMEL FRITS • GLAZE FRITS • PORCELAIN ENAMEL COLORS • GLAZE STAINS GLASS COLORS AND RELATED CERAMIC MATERIALS.

THE 1951 MERIT AWARD PRESENTED TO PEMCO EXCLUSIVELY IN ITS FIELD "FOR LEADERSHIP IN FORMULATION, FACILITIES AND PROCESSES IN THE PORCELAIN ENAMEL AND CERAMIC INDUSTRY."

AMERICAN • SOCIETY • INDUSTRIAL • ENGINEERS MERIT AWARD

OUR 25th YEAR* —*and the 1st Rotospray is still in daily use*

*Over 21 years of service to enameling plants.



YES, the first three Rotosprays ever built went into service in 1926 and they are still in use today.

Since then, hundreds of Rotosprays have gone into service on the toughest sieving jobs, and all continue to serve, day in and day out, with a bare minimum of upkeep cost.

Small plants *must* have at least one Rotospray for proper sieving results. Many large companies employ as many as ten or twelve units and make them pay dividends in labor saved and in faultless sieving results.

Rotospraying affords the most satisfactory sieving results in many fields. In the enameling industry it is the STANDARD method of sieving. Check your plant now and be sure it is properly equipped.

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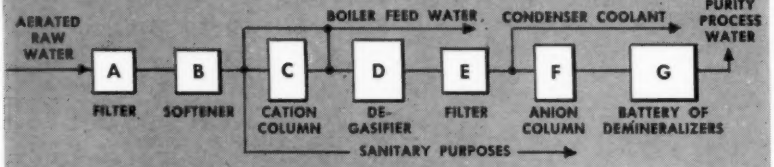
with "PLANNED PURITY" WATER

Flow Sheet of Typical Penfield "Planned Purity" Installation*

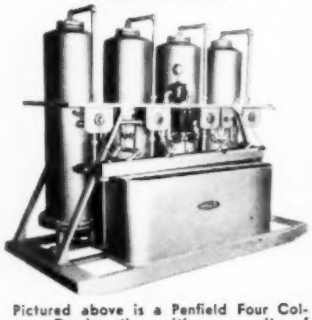


*Name of plant where this installation was made, on request.

Problem Assigned Penfield: Raw well water of 347 PPM total hardness (calculated as $CaCo_3$) and 187 PPM alkalinity, methyl orange, as well as considerable hydrogen sulphides, needs to be conditioned for use as follows: 1300 gph for boiler feed water and sanitary purposes; 100 gph for use as make-up water for a condenser coolant; and 2500 gph for a process requiring exceptionally high purity water.

"Planned Purity" Solution: Aerated raw water is passed through Sand Filter (A) to remove colloidal sulphur (precipitated by aeration), then through Softener (B), at which point water of satisfactory softness for sanitary purposes is drawn off. Approximately 3000 gph of softened water passes on to large Cation Column (C) where the cations are removed and the 187 PPM of alkalinity are converted to carbonic acid which can be blown from the water into the Degasifier (D) as carbon dioxide. The degasified water then is pumped through the Sand Filter (E) and on to the Anion Column (F). However, provisions are made (1) for combining water taken from the large Cation Column with equal parts of water taken from the Softener to make an ideal blend for boiler feed use; and (2) for drawing off 100 gph of water demineralized down to approx. 20 PPM total solids, which with small additions of caustic soda is ideal for use as make-up water for a condenser coolant. The remaining water passing through this multiple-use conditioning system goes on to a battery of Demineralizing Units (G) which deliver approximately 2500 gph of the exceptionally high purity water (conductivity of 1,000,000 ohms) required in the plant's process.

Model L-1000



Pictured above is a Penfield Four Column Demineralizer with a capacity of 1000 gals/hr. In comparison to distilled water costs, Penfield Industrial Demineralizers provide savings as high as 85% and in one reported instance cut costs 98%. No heat or steam power is ever required and units are ready for immediate operation on arrival at site. Send for "Penfield Pays" folio giving specifications of all Penfield Demineralizing units — from 10 gals/hr. to 10,000 gals/hr.

LET PENFIELD ENGINEERS MAKE A "PLANNED PURITY" SURVEY OF YOUR PLANT

As in the typical "Planned Purity" installation described above, by *planning* water-treating methods specifically for the various standards of purity and quantities required, Penfield engineers often are able to suggest a *multiple-use* conditioning system which, while holding equipment investments to a minimum, makes important contributions *both* to reduced plant operating costs *and* to improved process or end product results.

Write today describing your water conditioning needs.

PENFIELD
MANUFACTURING CO., INC.
19 High School Ave., Meriden, Conn.

FILTERS · SOFTENERS · DEGASIFIERS · DEMINERALIZERS

Penfield "Planned Purity" PAYS!

MEETINGS

ENAMELERS MEETINGS IN MAY

Central District Enamelers Club, May 4, Allerton Hotel, Cleveland.

Eastern Enamelers Club, May 12, Philadelphia.

Midwest Enamelers Club, *Maypole Party*, May 18, Sportsman Golf Club, Chicago.

STOVE MEETING, JUNE 4 - 6

The 19th annual convention and exhibit of the Institute of Cooking and Heating Appliance Manufacturers will be held at the Netherland Plaza, Cincinnati, June 4, 5 and 6.

AHLMA MEETING, JUNE 16

The summer meeting of the American Home Laundry Manufacturers will be held in Chicago, June 16, just preceding the opening of the Summer Homefurnishings Market.

CHEMICAL INSTITUTE MEETING

The annual conference of The Chemical Institute of Canada will be held in Winnipeg, Manitoba, June 18, 19 and 20.

HOMEFURNISHINGS MARKET

The Summer Homefurnishings Market will be held in Chicago, June 18 through 28, at The Merchandise Mart and the American Furniture Mart.

ELECTROPLATERS MEETING

The American Electroplaters Society will hold its annual convention in Buffalo, N. Y., at the Statler Hotel, July 30 through August 2.

1951 METAL SHOW IN DETROIT

The 33rd annual National Metal Congress and concurrent National Metal Exposition is scheduled to be held in Detroit, October 15 through 19. The Exposition will be held at the Michigan State Fair Grounds, with the technical sessions held in hotels in downtown Detroit.

How modern stamping techniques can help conversion

by James M. Leake • PRESIDENT, THE LEAKE STAMPING COMPANY, MONROE, MICHIGAN

DEFENSE PRODUCTION FEATURE

The nature of this article requires us to deal with the comparative values of the various processes in the realm of metal working. We know there is a great divergence of opinion on this subject.

The reason for the existence of several industries in this field is the fact that no one industry offers everything to be desired. The position of each industry depends on what it has to offer on the open market in competition with others.

No industry can rest on its laurels. It is absolutely necessary to continually pioneer new developments to keep in the vanguard of progress. We must make use of every technological improvement that can be used to advantage by our industry. . .

With each passing year, the problem of the stamping industry to care for the ever increasing demands for stampings becomes more stupendous. Such indispensability certainly does not depend on belittling competitive processes. . .

Editor's Note:

The company of which the author is president is only ten years old and started with ten employees. During those ten years it has done $15,000,000 in stamping business, of which about one-half has been subcontract work on government contracts. Fabricators will be particularly interested in the illustrations showing examples of conversion stampings accompanying the article. Mr. Leake is also chairman of the Toledo District of the Pressed Metal Institute.

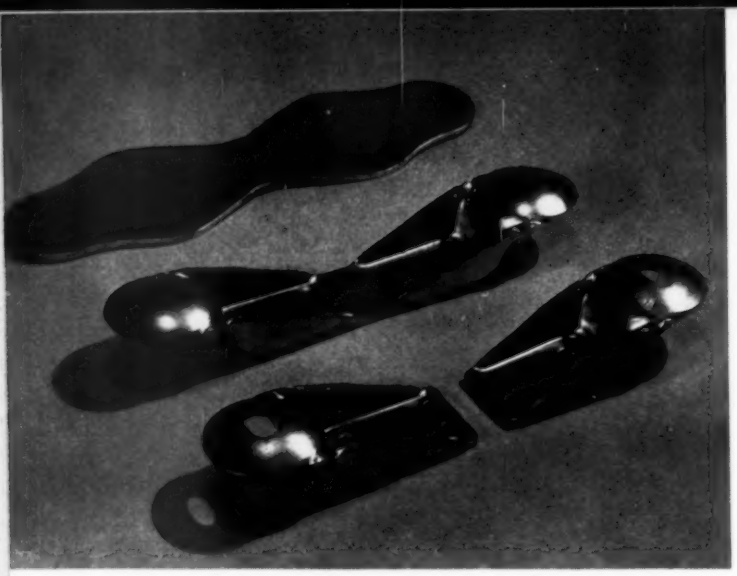
Today more people everywhere need more and more of everything made of stampings. Material shortages alone hamper the production of many dream items of today, as well as preventing the introduction of many of the dream items of tomorrow. . .

Of no other industry may it be more truly said, "Its life blood stems from its own resourcefulness." Many companies are making their greatest progress during these times of material dislocations, allocations and "laminations." Adversity has awakened latent ingenuity, capable of surmounting obstacles and turning defeat into victory.

When people think of stampings, they think of low unit cost, great strength in proportion to weight, great density, maximum interchangeability, uniform appearance, and high production with comparatively unskilled help.

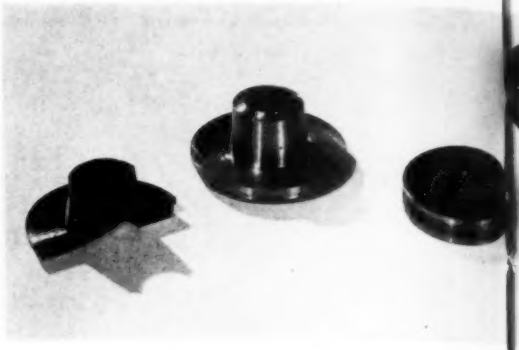
Stampings have the advantage of a wide choice of materials. They respond to all types of heat treatment. They are ideal for all methods of

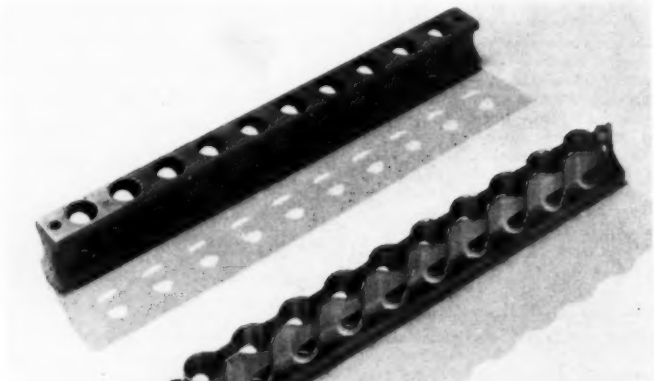
Bomb fuse adapter — *showing steps in its fabrication. The ratio between the metal thickness, diameter and depth, together with the wall ironing makes this part a challenge. Others making this part used a lighter gauge material and attained the sectional variations by brazing a collar around the thicker section and a slug in the bottom to attain the required thickness.*



Lamp bracket — *shows how an unbalanced part becomes ideal for production when made double. This part goes on a crawler-type tractor where it is subjected to severe vibration. Two stampings are made with every three press strokes. As a stamping, it requires no machining or drilling.*

Hub experiment — *an example of cold extrusion from the blank. As an experiment, a die was made which permitted great pressure to be applied on the flat surface of a disc 7/32" thick. As the disc was compressed 1/32", the steel flowed upward into a cavity provided, and formed the hub as shown below.*

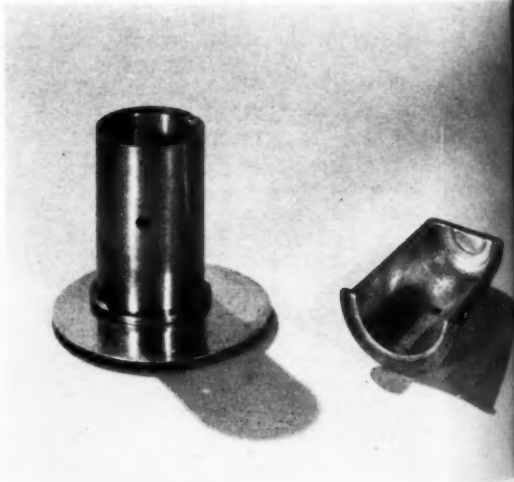




Serum bottle holder — *during World War II when aluminum was forbidden for many purposes, work was done to develop a part of steel to perform the function of an aluminum bar of irregular shape and with multiple holes. The suggestion of this 3/8 gage steel piece shown at the left was accepted and resulted in saving scarce aluminum.*

Silver-lined bearing — *an example (below) of aircraft engine bearings produced in draw dies from flat silver-clad high tensile steel. The problem involved finding proper annealing temperatures for both silver and steel. Contrary to expectations, the bond holds up remarkably well in drawing and severe reducing operations.*

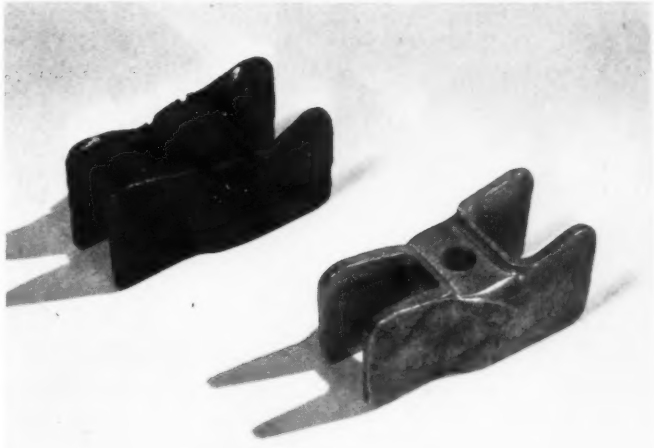
Welder rheostat panel — *originally was a disc to which a heavy pipe section was welded in the center, and outside of pipe turned to make a ledge. Now, legs are made an integral part of panel, eliminating 4 separate lugs, 8 bolts and lockwashers and ledge is produced by flaring open end of tubular section.*



Valve rotator — *success with the hub extrusion led to work on a part shown below, with a similar hub to the one shown at the left, but with some added complications. This development is now in its final stages. So far, we have no assurance of extruding this in less than two operations.*

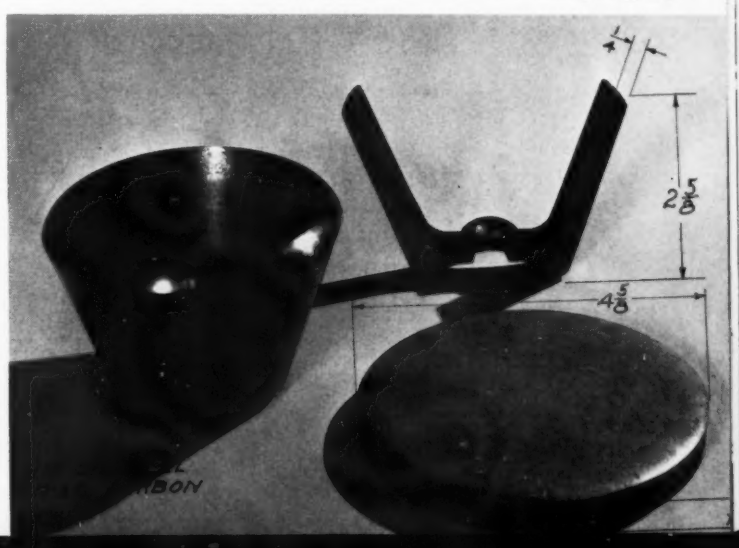
Torque converter roller gage — *a machined assembly consisting of two steel rings and 20 accurate, hardened end-ground Torrington pins. Ends of all pins were left soft as all the pins had to be riveted at both ends when assembled with the two rings. For parallel stamping, see photo on following page.*

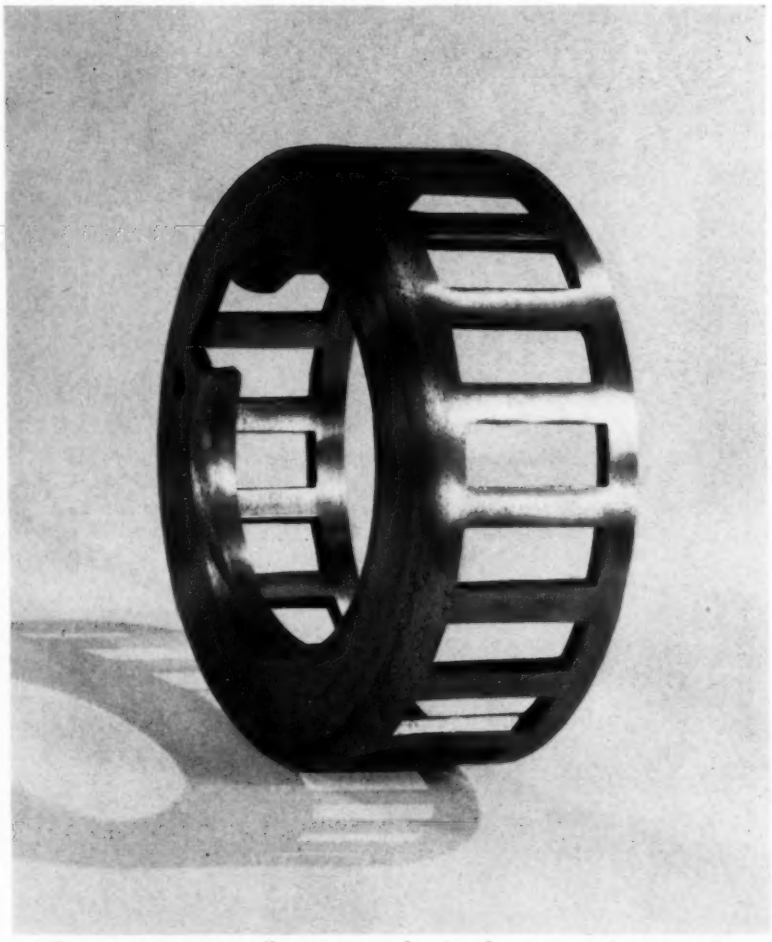
Half track guide — *development shown at right involved a special rolled section of SAE 4140 chrome molybdenum bars 3/16" thick at the edges and 5/16" in the middle. Three forming and sizing operations were made progressively in one press with only one heating. Production of this item at Leake Stamping reached 16,000 daily and consumed 4000 tons of this alloy steel for one contract.*



Seat post — *originally a 5/32" diameter hole was pierced through this ½" round bar, and a 5/32" pin inserted into the hole so that the ends projected from the rod. Later it was found that the projections could be extruded from the rod, as shown below, and get the same result with but one piece.*

Coined cup — *an example of extrusion of a die cut blank. The material being over .30 carbon required spheroidize annealing. The working steels must be very rigidly supported to prevent expansion of the hardened ring and ring breakage. With proper lubricant and die construction, the results can be most gratifying.*





Torque converter roller gage — *showing how a one-piece stamping which performs the function of the machined assembly shown in the upper right hand corner of the preceding page. While this stamping must be made with great precision, it has proved to be a practical development.*

plating. Their surfaces are unexcelled for all forms of painting and their lighter weight means great savings in freight.

Most stampings may be processed cold. This cold working gives added built-in strength. Most stampings do not require the machining that is so common with the other methods of fabrication. Stampings may be assembled by every economical method of assembly. They may be bolted, riveted, lock seamed, seam welded, spot welded, arc welded, flash welded, silver soldered and copper hydrogen brazed.

Imagine a range, washing machine, refrigerator, radio, television, automobile or truck made without stampings. . .

To be successful as a pioneer in the field of conversion to stampings, one must keep informed of every new development that may open up new opportunities for redesign. In every instance one must visualize the completed result before a start is made.

Conversion pioneering requires resourcefulness

Complete knowledge of every phase of stamping operations is necessary, but by no means a guarantee to success. Creative ability, imagination, patience, and cost knowledge are equally important. Also, all available associated processes must be evaluated.

A conversion pioneer is wise who expects occasional troubles, as they cannot always be foreseen and avoided. The main thing is to possess the courage and confidence so essential to overcome each problem as it appears. Remember *if it had been easy, it would have been solved.*

A pioneer must venture into uncharted areas of imponderable unknowns or he is not a pioneer. If you read the solution of your project in a book, you are too late. But if the book says a thing cannot be done and your experience leads you to believe otherwise, do not hesitate to venture forth. The word "impossible" has no place in the life of a stamping pioneer, for many are doing the impossible and making it pay. . .

Changing conversion problems

Until recent times, most conversions have been built around parts that required but little change in sectional proportions. This class of parts was largely limited to forming and drawing operations. Most existing press equipment was designed with this purpose in mind.

In drawing operations, the stresses encountered are largely tensile wherein the outer areas of the blank are tightly held in yieldable retention until overpowered by the punch pressure over the central area.

Where multiple drawing operations are necessary, the number of reductions may be predetermined by formulas that are well known to drawing die designers. The size of the draw radii over which the blank must move is of great importance and they have now been tabulated for reference purposes.

Many of us have had to learn by costly experience the many things that can keep a drawing die from working properly, such as improper die setting, lack of air holes to permit the escape of trapped air, improper or uneven die clearance, the blankholding surfaces gripping the outer flanges unevenly, due to a dozen commonly encountered causes, or even making the wrong selection of a drawing compound.

Drawing problems

It is of vital importance in drawing operations to accumulate enough metal in the first draw operation when the metal still can flow in from the edges to be sufficient for all succeeding operations without additional stretching.

to Page 84 →

"Topside" oven installation saves floor space

low ceilings no obstacle in overhead oven installations for this finishing plant for furnace casings and boiler jackets

WHEN the Atlas Manufacturing Company, of St. Paul, Minnesota, producers of furnace casings and boiler jackets, decided to modernize their finishing system recently, they were confronted with the problem of securing overhead oven space in a building with a low ceiling. However, the problem was quickly solved when a 600-foot conveyorized finishing system was designed for "topside" installation. The ovens, together with all oven heating equipment, were built on the plant roof.

The Atlas installation depicts the modern trend in high production finishing. The company has already proven to their own satisfaction the tremendous advantages to be realized in the operation of continuous conveyor finishing systems and conveyorized high efficiency ovens. The new system, which includes a burn-off oven for degreasing and a finish bake oven, both located on the roof of the plant, replaces three batch-type floor ovens and a conventional cleaning set-up. This has given Atlas approximately 800 square feet more plant floor space, which is used to very good advantage, especially in the loading and unloading areas of the conveyor.

H. E. Kerr, plant superintendent, is very much enthused over the oven burn-off process now used. He says that in their operation, the burn-off process gives every indication that it will pay for the new equipment in operating savings, and that, exclusive of every other money saving advantage of the system.

Labor costs reduced 25 per cent

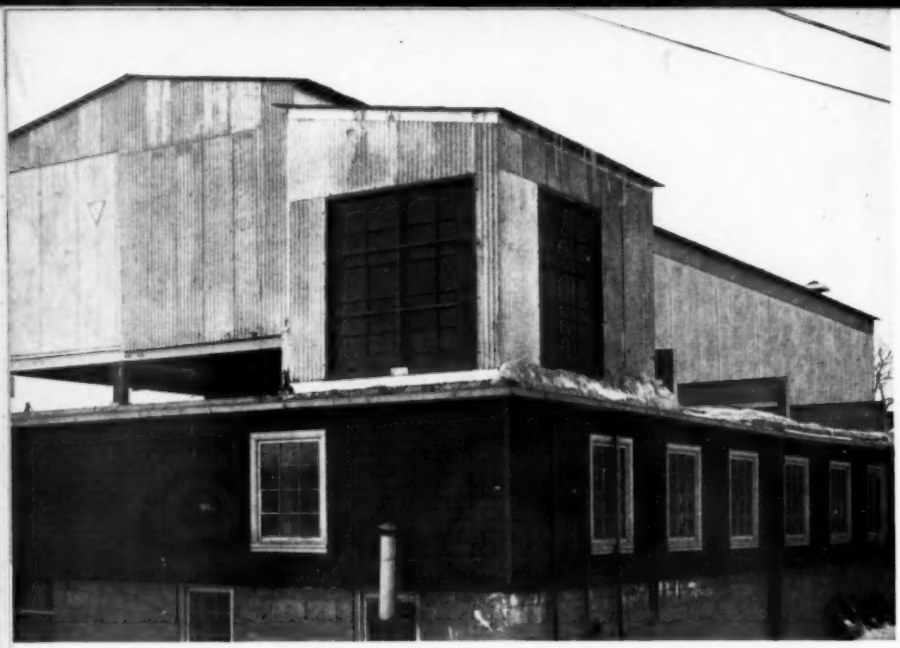
The new finishing system is rated at 100 complete cabinets in eight hours, operating at a conveyor speed of 10 feet per minute. This is a substantial increase in production, and, at the same time, labor costs have been reduced by about 25 per cent, according to Kerr.

Tracing the route of the conveyor, as its leaves the loading area, it makes a complete left turn and immediately starts upward into the burn-off oven. Here the ware is subjected to a temperature of 600° F. for six minutes. It is interesting to note that the conveyor enters and leaves the oven via a single bottom opening. This feature of the oven construction forms a natural heat seal conserving heat and aiding greatly in the prevention of oven fumes reaching the plant.

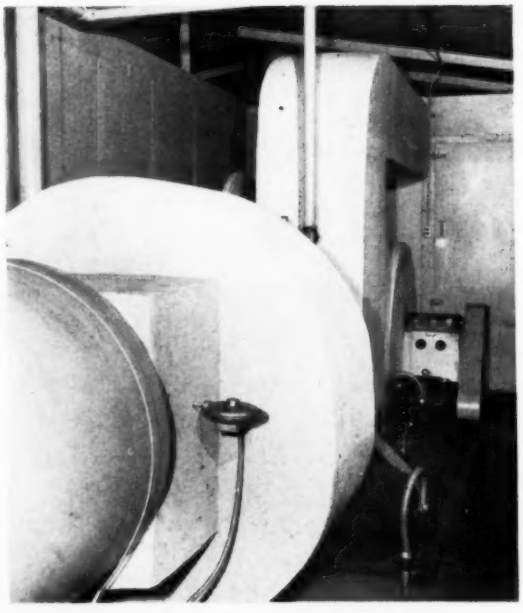
Application of synthetic coating

As the conveyor returns the ware to a working floor level, it is given

A close-up view of the entry-exit finish bake oven opening. The left side of the conveyor line is moving into the oven while on the right the line is descending and moving into the cooling area.



Above: This rooftop structure contains the burn-off and finish bake ovens of Atlas Manufacturing's modern conveyorized finishing system. The windowed section houses the oven heating equipment.



Right: Interior view of the oven heating equipment room adjacent to the ovens. The layout represents modern design with emphasis on both utility and appearance.

Below: The floor level unloading area is strategically located. The various components of a furnace casing or boiler jacket are trucked to an adjacent area where they are packed and shipped flat.

PHOTOS COURTESY DESPATCH OVEN CO.

a passing inspection preparatory to arriving in the paint spray booths. As the ware passes through the first booth, a synthetic coating is sprayed on the inside surfaces. It then continues on through the finish coat booth where the finish coat is sprayed on the outside surfaces. Any one of three finishes may be applied, including hammer finish, wrinkle finish, or plain enamel.

Next, the conveyor carries the freshly painted ware upward for a second time and into the finish bake oven. This oven operates at 350° F., and is slightly longer than the burn-off oven. The trip through finish bake takes eight minutes. The single entry-exit design is also a feature of the finish bake oven.

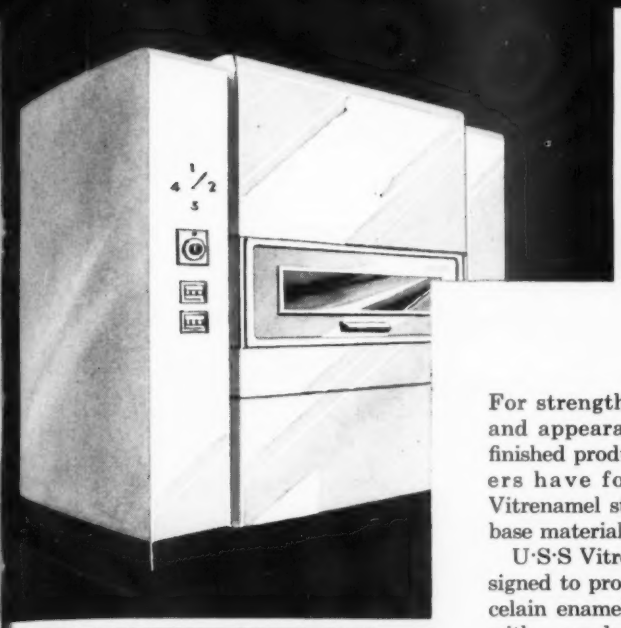
Finishing operation stresses practicability and convenience

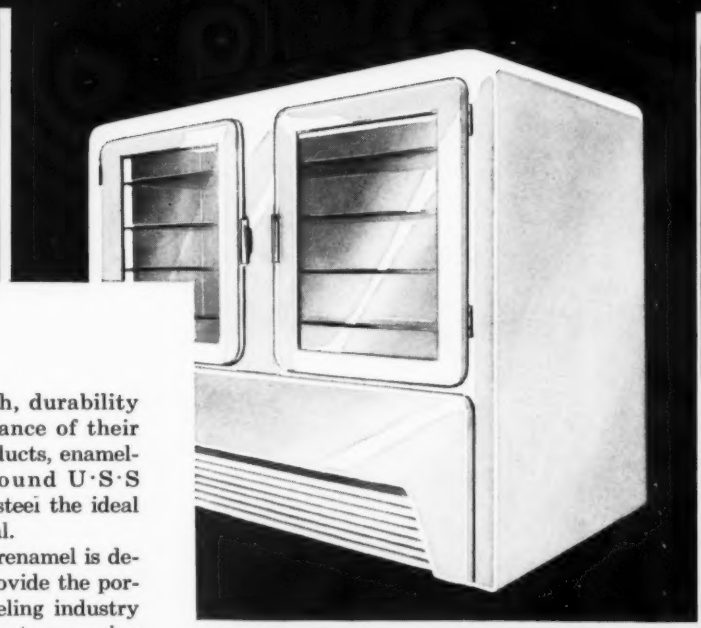
Emerging from finish bake, the conveyor drops to ceiling height where for several feet it travels through an open factory area for the purpose of cooling the ware. As it reaches the unloading zone, it descends to an easily accessible level where the ware is lifted off. As the various furnace and boiler sections are taken from the conveyor, they are sorted and stacked on floor trucks, ready for packing and shipping. The entire Atlas finishing operation stresses practicability and convenience, and is notable for the absence of lost motion.

Ovens specially insulated for rooftop installation

The fact that the ovens are located outside the building and on the roof presents no heating problems or heat loss. They are especially designed and insulated for this type of installation. Each oven is direct gas-fired and employs the convection heating principle.

The complete heating equipment for both ovens, including all electrical and safety controls, is housed in a specifically constructed, well insulated room built alongside the ovens. This room forms an integral part of the oven structure proper, which represents a functional and attractive rooftop layout.





For strength, durability and appearance of their finished products, enamelers have found U·S·S Vitrenamel steel the ideal base material.

U·S·S Vitrenamel is designed to provide the porcelain enameling industry with a product possessing the essential physical properties, and having a surface texture that will insure maximum adhesion.

And the U·S·S Vitrenamel label is an added sales point for porcelain enameled products made from this quality steel.

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UNITED STATES STEEL

The use of heat exchangers in the pickle room

a practical method for heating pickle room and plating solutions that conserves strategic materials

by Norman H. Stolte • CERAMIC ENGINEER, THE ENAMEL PRODUCTS COMPANY, CLEVELAND, OHIO

Exclusive feature finish

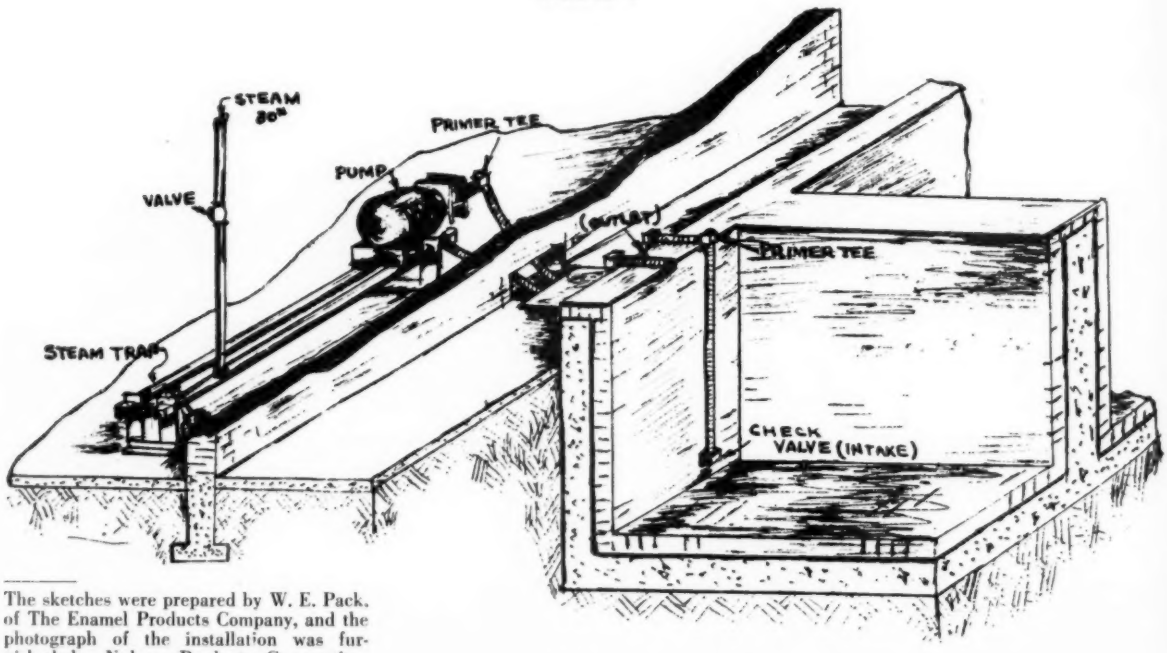
With the allocation of acid for pickling purposes, the importance of conserving the amount used has to be given careful consideration. Replacement of coils presents quite a problem, especially with hydrochloric or muriatic acid. Special alloys are required and are practically not available at this time. The use of steam jets for heating causes dilution, requiring daily additions of acid in order to maintain the desired strength. The steam jets also tend to shorten the life of the brick lining in the tank by causing wear on the joints which soon tend to leak.

Use of graphite for heating

A survey of the possible substitutes available suggests the use of graphite for heating, and stoneware, plastics or rubber for auxiliary equipment.

Graphite, because of its high chemical inertness, high heat transfer and resistance to thermal shock, is an ideal material for heating corrosive solutions. Impervious graphite, the material used, is made of graphite which has been rendered impervious to seepage of fluids by impregnation with chemically resistant synthetic resins. It is not recommended for strong oxidizing agents such as nitric or chromic acids, or for sulphuric acid in excess of 75% concentration. Nickel dip or plating solutions have no effect on the material.

FIGURE 3



The sketches were prepared by W. E. Pack, of The Enamel Products Company, and the photograph of the installation was furnished by Nukem Products Corporation, Buffalo, New York.

o HEAT EXCHANGER INSTALLATION o

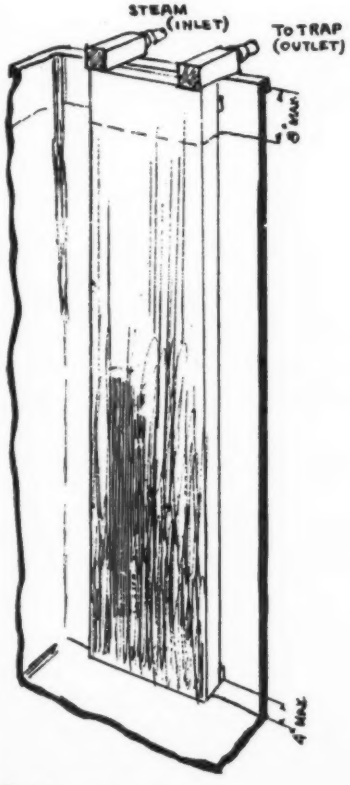
The following table indicates the comparative thermal properties of various materials:

Material	*K*
Silver	2900
Deox. copper	2400
2-S aluminum	1570
Red brass	1100
Karbate (impervious graphite)	1020
Admiralty	760
Carbon steel	460
Nickel	420
Tantalum	375
Cast iron	372
17% chromium	360
Chemical lead	240
Antimonial lead	200
Monel	180
Hastelloy "A"	116
18-8 stainless	105
Ironel	104
Carbon	36
Chemical stoneware	10

K = Btu/hr/sq.ft/F°/inch

Because of the impregnated material used in the heat exchange medium, temperatures should be kept below 338° F. (170° C.).

FIGURE 1



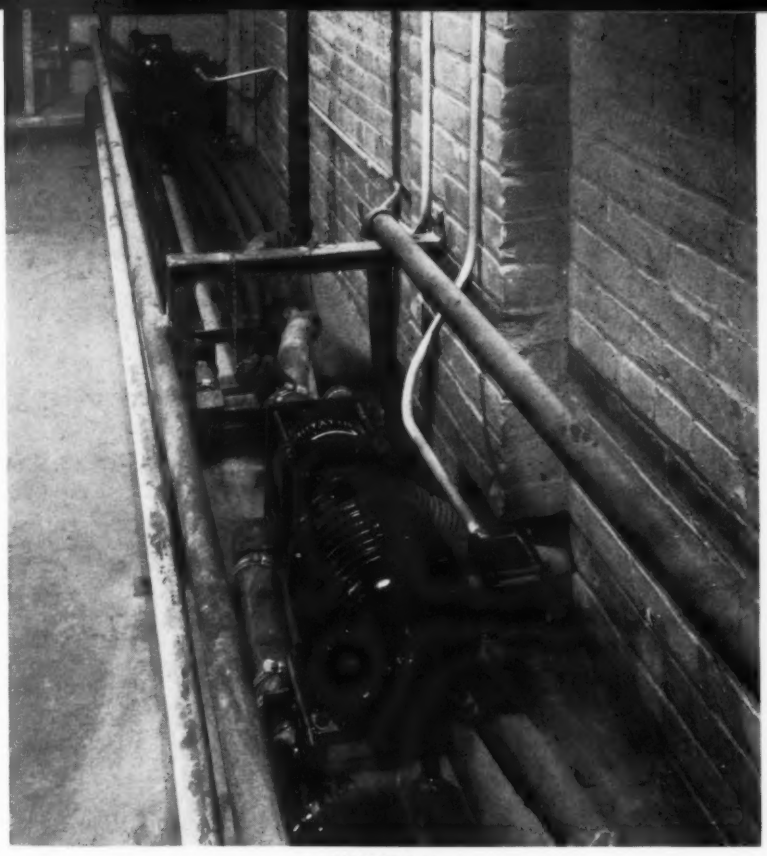


FIGURE 2

Plate-type heat exchangers, incorporating the impervious graphite, have been designed for use in pickling tanks (Figure 1). They should be protected from baskets and falling ware, as the material is quite brittle and therefore will withstand little or no mechanical abuse. It may therefore be more advisable to use the tube- or shell-type external heat exchanger. This will necessitate the use of a pump to take the solution from the tank and pass it through the heat exchanger. Pumps constructed of stoneware, impervious graphite, plastic, and rubber covered steel are available for this purpose. The new type of heat exchanger with a plastic pump is shown in Figure 2. It consists of two 9-foot impervious graphite tubes, 1½″ inside diameter and 2″ outside diameter. The tubes are encased in a 2½″ inside diameter steel pipe that acts as a steam jacket. The plastic pump and motor is mounted on top of the two parallel tubes.

Size of unit may vary from single to multiple tubes

The size of the unit required may vary from a single tube to multiple tubes, depending upon the volume and time required to heat up to operating temperature.

Rubber hose and plastic elbows are used to handle the solution and to connect the pump to the heat exchanger tubes. This also allows considerable flexibility in locating the unit.

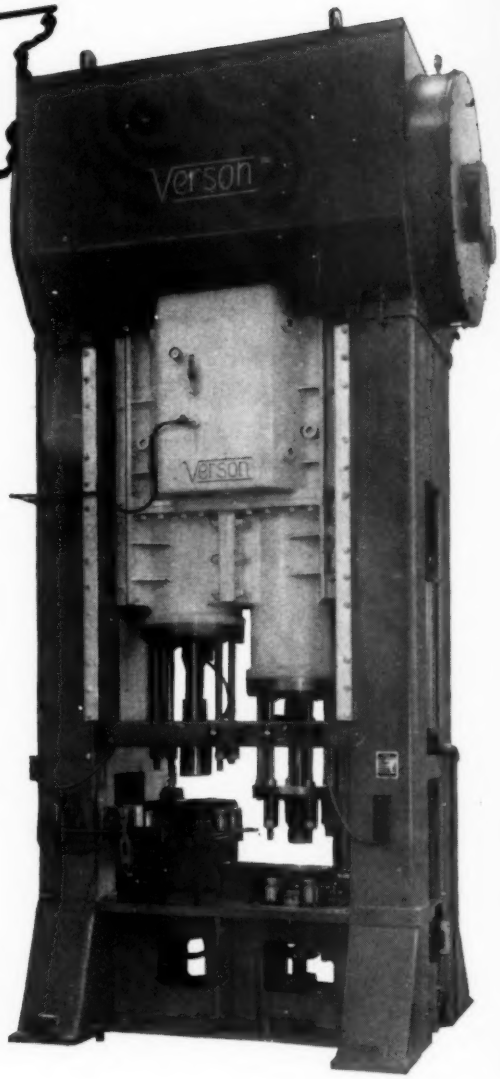
A typical pickle set-up is shown in Figure 3.

The maximum recommended operating pressure for the unit is 50 psi gage for steam. It is not advisable to return the steam condensate from one of these units to the boiler. In case of a crack in the tube, the damage to the boiler and the possibility of a shutdown would be many times greater than the savings from using the return condensate. If suitable precautions are taken, such as a pH meter on the return line, it may be safe to use the return condensate.

Experience to date would seem to indicate that this equipment is well suited for use in the pickle room. It is not new, but has been used for years for both the heating and cooling of corrosive solutions in the chemical industry. In the past year, many plating plants have gone over to this type of equipment.

Can you match these production figures?

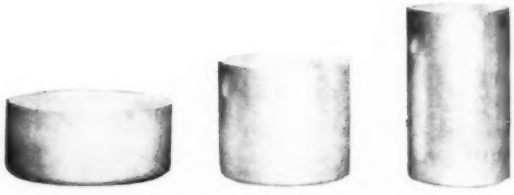
THIS TRADE Verson MARK AUTOMATIC TWO STAGE THREE OPERATION DRAWING PRESS produces over 1200 shells per hour



Typical of how Verson presses are advancing the efficiency of press forming of metals is the automatic two stage three operation drawing press illustrated above. 4½" I.D. x 7¼" deep shells are drawn at the rate of 1200 per hour! A completed shell is discharged at each stroke.

Presses such as this are typical of the many unusual machines being produced by Verson. But whether your job is unusual or conventional, it will be of interest to you to learn how Verson's extensive experience and know-how as a manufacturer of better presses for most jobs can help you.

Whatever your press requirements, whether they call for a single machine or a complete tool-up, call on Verson.



At the right is the finished shell after the final drawing and setting operation. Drawn from 21 ga. stock, the dimensions are 4½" I.D. x 7¼" deep.

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Metal stampers discuss conversion problems, military procurement

representatives of companies from Canada to the West Coast join in Pressed Metal Institute's second annual spring technical meeting

A fine program of technical and practical information was on tap for metal stampers attending their industry's second annual spring technical meeting held in Hotel Carter, Cleveland, Ohio, on March 29 and 30, under the sponsorship of the Pressed Metal Institute.

A well-planned program on *tolerances, die standards, safety*, and *conversion for ordnance* was presented to the stampers in attendance, including representatives from the West Coast and Canada.

In his address of welcome, O. B. Werntz, PMI managing director, gave credit for the development of the very worthwhile two-day meeting to Raymond Peterson, president of Peterson Engineering Co., Toledo, co-chairman of the PMI Technical Standards Committee.

Session on tolerances

The opening session on Thursday morning was devoted to "Tolerances" with J. J. Boehm, president of Boehm Pressed Steel Co., Cleveland, acting as moderator.

The first speaker was Stanley R. Cope, president of Acme School of Die Design Engineering, South Bend, Indiana, who discussed "Mill Tolerances—Their Effect on the Finished Stamping and Their Relation to Die Design." Cope used blackboard diagrams to illustrate this talk. One point he stressed was that some process engineers make the mistake of attempting to specify that two parts be formed on the same die.

J. E. Novatny, process engineer with Majestic Engineering Co., Dayton, was the next speaker, discussing "Close Tolerances and Improved Finishes from Precision Dies." One suggestion that Novatny passed on to his audience was that they use carefully ground dies for good surface finish, if they do not anticipate many design changes.

finishfoto

Harry Blythe, luncheon speaker

The final speaker at the opening session was G. A. "Gus" Bauman, chief inspector of Mullins Manufacturing Corp.'s Salem (Ohio) plant. Bauman was speaking for Jacques Stanitz, Mullins' chief engineer of production development, who had been scheduled to discuss "Tolerances in the Job Stamping Plant."

Die standards

Raymond Peterson was moderator for Thursday afternoon's session on "Die Standards."

K. C. Butterfield, process engineer of Fisher Body's mechanics section, Detroit, first discussed "Die Design Standards at Fisher Body," and then, with the aid of Stanley Kowalski, also of Fisher Body, presented a series of slides on the importance of die design standards in the production of automobile parts.

In his illustrated talk on "Die De-

Appliance stamping problems are discussed by G. A. Helberg, Maytag; E. W. Blackman, Blackman Stmpg. & Mfg. (Los Angeles); and E. M. Ross, PMI staff.

finishfoto

Panel on tolerances — *Gus Bauman, Mullins Manufacturing; Joe Novatny, Majestic Engineering; Stanley Cope, Acme School of Die Design Engr.; O. B. Werntz, PMI managing director, welcoming stampers; and J. J. Boehm (moderator), Boehm Pressed Steel.*

Panel on conversion — *Lawrence Jacobsmeyer, Su... over Metal Processing; A. W. Swift, Handy & Harm... Frank Humberger (moderator), Tech. Metal Proc.; H... ard Ronfeldt, Ronfeldt Assoc.; James Leake, Leake Stm...*

A. P. Gockel, Verson Allsteel Press; J. J. Karash, Reliance Electric & Engineering; James M. Leake, T. K. Caves, and A. L. Homeier, all of Leake Stamping.

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W. H. Hoak, Niles Rolling Mill; G. H. Bauman, Mullins Mfg.; K. V. Merrill, Niles Rolling Mill; Phillip Ehresmann, Bossert Co.; and E. W. Blackman, Blackman Stamping & Mfg.

Paul Anstedt, C. C. Caditz, and Arnold Bendoff, all of Northern Metal Products; Aldo Cohn, standing, Alpha Products; C. G. Rose, Judson & Rose; John Walsh, U. S. Tool; Philip Atwood, Judson & Rose.

sign Standards at Westinghouse," E. Griffiths, consulting manufacturing engineer with Westinghouse's headquarters manufacturing division in Pittsburgh, discussed in detail the importance of die design standardization in the far-flung operations of his company.

Safety suggestions

On Friday morning, E. M. Ross, PMI staff assistant, acted as chairman and introduced W. F. Ardussi, president of Variety Machine & Stamping Co., Cleveland, who was moderator at the session on "Safety Suggestions."

Walter Baird, plant manager of Toledo Pressed Steel Co., used color slides to illustrate his talk on "Die Safety and Its Applications." The purpose of the slides were to show how his plant uses color as a safety measure in the press department. Besides their use of color, Baird mentioned that an important safety practice in their plant is a 5-10 minute rest period every hour for press operators. He also recommended that for safety's sake "make dies heavy enough and big enough."

In his talk on "Safety at the Press," Ray Mausk, industrial sales engineer

Al Baeumle, Leo Schultheiss, Internati... C. Ga... Harvester; Louis Lockshin, C. R. H... ix Wi... Century Engr., Toronto.

Panel on die standards — *E. Griffiths, Westinghouse; Raymond Peterson (moderator), Peterson Engineering; Stanley Kowalski and K. C. Butterfield, both of Fisher Body, Detroit.*

Panel on safety — *Paul Anstedt, North. Metal Prod.; W. F. Ardussi (moderator), Variety Machine & Stmpg.; Walter Baird, Toledo Pressed Steel; J. J. Karash, Reliance Elec. & Mfg.; Ray Mausk, Cleveland Electric Illuminating Company.*

for Cleveland Electric Illuminating Co., stressed the necessity of proper lighting in reducing accidents in the press shop. He suggested more effective use of available daylight and the reduction of glare. He suggested that inasmuch as press machines have a dull surface appearance cavities should be painted white. Mausk concluded that proper lighting will reduce fatigue which is a major cause of accidents.

"Safety at the Press" was the title of a talk by Paul Anstedt, works manager of Northern Metal Products Co., Chicago. He pointed out that "safety has to be repetition" and that one has to "be a pest" to follow through with safety in the plant.

In the last talk on the morning session, J. J. Karash, assembly department foreman, Reliance Electric & Engr. Co., Cleveland, used slides to illustrate how proper die design will permit press operators to work "without reaching into the die area." He urged that enough time be spent on the die designing operation to avoid bad safety practices at the press.

Conversion for ordnance

The closing session on Friday after-

to Page 62 →

R. W. Breckenridge, Automatic Die & Products; Ray Mausk, Cleveland Elec. Illuminating; Harry Boscher and Harold Eckmann, Eckmann Pressed Metal; and Matt Heuertz, finish *magazine.*

finishfotos

F. E. Beach, Jackson Metal Products; R. C. O'Brien, Means Stamping; F. W. Schmidt, Jackson Metal Products; Walter Baird, Toledo Pressed Steel; and Ray Peterson, Peterson Engineering.

Ray Christenson, Wrought Washer; Dave Alfredson, Gray Stamping; C. W. Knobloch, Erie Art Metal; J. L. Chase, E. W. Bliss Co.; and F. J. Milewski, Erie Art Metal.

C. Gates, General Electric; Bob George, ix Wire; and A. W. Swift, Handy & Harman.

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Edison Electric Institute holds 17th annual sales conference

STATING that "in times of peace or war, we should never forget to sell," L. V. Sutton, president of the Edison Electric Institute, opened the general luncheon session of the EEI 17th annual sales conference, held at the Edgewater Beach Hotel, Chicago, April 2-6.

"We should profit by the mistakes that many of us made in World War II in dispensing with our salesmen," said Sutton. "On the basis that materials and equipment could not be obtained and that the extra power was not available, many companies laid off large parts of their sales organization and curtailed, very materially, their sales activities. The result was to be regretted. With a big backlog of orders that could not be filled and vital materials and parts that customers could not obtain, the customer needed attention. . . . The time to make friends is when our customers are in trouble, and, consequently, more responsive.

"The salesman has been one of our principal contacts with our customers and a most effective ambassador of goodwill. We need him. . . . *Whether or not appliances are available, there is a selling job to do* in the electric utility industry.

L. V. SUTTON, EEI PRESIDENT

Looking beyond the emergency

"Looking beyond the current emergency," continued Sutton, "there lies a greater future acceptance of things electric — additional new appliances not even known now — new uses in all fields, in lighting, cooking, air conditioning, laundering, color television, industrial heating, dielectric heating, materials handling, farm electrification, and therapeutic uses. As new devices come into existence, it will be the responsibility of our sales organizations to help distributors find new outlets, help dealers train their new salesmen, and cooperate with all agencies concerned with creating public acceptancy of such new equipment. . . .

Keep sales organization intact

"I urge you again not to permit a deterioration of your sales organizations. If your sales training courses do not provide for keeping your sales staffs abreast with development within the industry, I hope you will inaugurate such training at the earliest moment. Every sales contact is an opportunity to tell our industry story. . . .

"As long as the *salesmen* of this nation realize that a true democracy provides the only climate in which a free market can exist, I shall continue to be optimistic," concluded Sutton, who is also president of Carolina Power & Light Co., Raleigh, N.C.

Home service and appliance merchandising

In an address before the EEI home service conference, D. A. Packard,

W. V. O'BRIEN

EDWARD R. TAYLOR

D. A. PACKARD

household sales manager, Kelvinator Division, Nash-Kelvinator Corp., discussed "Home Service and Appliance Merchandising".

As a prelude, Packard presented a picture of the appliance inventory situation.

Regarding the value of home service directors, Packard cited the work done by this group, during the "no supply" era of World War II, has shown "very tangible results."

As an example, said Packard, "In 1942 we went into the war years with the consumer acceptance of electric ranges at a certain level across the country. For three years no sales effort was put behind this product by manufacturers or dealers. However, when we came out of the war all of us quickly realized that the consumer acceptance for this product was considerably greater than it had been at the time production stopped.

"Together the home service advisors and their associates, the home equipment editors of our women's magazines, kept at their work so consistently and effectively that, in my opinion, the consumer acceptance for this product (the electric range) kept right on growing throughout the years in which there was no direct selling effort."

Changing conditions in the merchandising field

Regarding the "constantly changing conditions" which merchandisers and home service directors run into in connection with consumer appeal of appliances, Packard used as an example the various steps the electric refrigerator has gone through in the past 25 years from the standpoint of consumer appeal.

First, there was the early promotion telling the story of "molds, yeast, bacteria and enzymes" . . . then a period when emphasis was on "operating costs" . . . next a period of "low term selling" during the days of meter selling . . . then into a period of "gadgets and convenience" . . . in recent years an emphasis on size "as first-time buyers of 6-cubic-foot boxes began to realize that they would never buy a refrigerator large enough" . . . and now a period of "combination refrigerators, low temperature compartments, and other new developments."

Industry and the defense effort

In his address before the general session, William V. O'Brien, commercial vice president, General Electric Company, New York City, discussed the topic, "Industry and the Defense Effort."

"At the present time," said O'Brien, "our planning, as I understand it, is to step up production in all basic areas so that we can provide the weapons and goods for defense, as well as providing the goods so necessary for peacetime living. . . .

"Granted that the demands of a possible World War III will be even greater than our last war, plans in the utility industry can satisfactorily take care of these incremental power requirements.

An optimistic view

"But let's take an optimistic view of the future. Suppose that our arming and increased national production is sufficient evidence to a potential aggressor that he can't win — that to start an all-out war would be futile. Then we are going to have power to *sell* before too long. The increase in population from 149.2 millions in 1949 to an expected 156.2 million people in 1952 will automatically create a market, but there will still be a selling job to do.

"Looking ahead to this selling job, now is the time to create and maintain good customer relations. Never has a salesman had a greater opportunity to better his customer relations. In our rapidly expanding production, many of our customers are badly in need of expert specialized help which we can give them," stated O'Brien.

Keeping ahead of competition

Edward R. Taylor, general sales manager, Hotpoint, Inc., Chicago, was another general session speaker. His topic was "Keeping Ahead of Competition".

"While our industry has made unprecedented gains during the past five years," said Taylor, "that progress has been matched by a number of others. Despite the sale of four million automatic washers, the commercial laundries are doing more business than ever before. The same can be said of the commercial eating industry, and even more to our disadvantage, of many luxury industries. . . .

"We must all admit that in the past five years, creative and competitive selling has been negligible. I think it is timely to say that before the last leaf is taken from the 1951 calendar, there is going to be some mighty hard selling and promotion carried out in our industry. We were ready for it last June when the defense shortage scare came. We are coming up against it again in the period directly ahead, and we are going to face it without our boon companions of recent time, *pent-up demand* and *scare buying*. . . .

"Despite the rearmament program, appliances are approaching a condition of free supply right now. . . .

"During recent weeks, all of us who follow the situation have become aware that appliance inventories are piling up in dealer's stores. The reasons are becoming painfully obvious. In anticipation of the shortages and restrictions of a semi-military economy, manufacturers speeded up production to make as much as they could. At the same time, dealers took all they could get against the day when they thought they wouldn't be able to get shipments. This was all right while the public was literally scrambling to get goods because of fear of shortages and fear of price advances. But the public got over its panic buying at least a month or two ago, and inventories have been mounting ever since.

"It is a good thing for the industry that 'scare' buying has ceased. That condition created confusion and detracted from our broader aim of keeping ahead of competition by planned programs. . . .

"Indications are that the nation's economy can be expanded to permit a balanced 'butter and guns' economy. . . . We must plan now for the present and long term programs for electrical living promotions," concluded Taylor.

to Page 82 →

6 Reasons Why More and More Appliance Manufacturers Are Moving to

The Merchandise Mart

THE SHOW PLACE OF AMERICA'S BEST-KNOWN BRANDS

52-Week Market Center

Showrooms in The Mart are open every day, every week of the year. Because of this, huge numbers of buyers come to it throughout the year, not only at the regular market times.

All on One Floor Office Space

Entire companies can be housed on *one* floor at The Mart, saving much time and expense. Space can be divided and developed to suit your exact needs.

Showrooms Tailored to Your Specifications

The clean, dazzling showrooms of The Mart and the famous manufacturers who display lines in them have earned The Mart the name, "Show Place of America's Best-Known Brands." Smart, individual decoration and lighting dramatize each showroom to utmost advantage.

Easily Reached Location

The Mart is set away from the congested Loop area, and yet it affords exceptionally fine transportation. The North Shore and Elevated stations are on the 2nd floor of The Mart itself—4 bus lines, 2 trolley lines make travel to and from The Mart easy from any place in greater Chicago.

Air-Conditioning

The Mart's huge air-conditioning plant makes individual air-conditioning installation simple and economical. 65% of the building is now air-conditioned the year 'round.

Fine Parking and Service Facilities

The Mart maintains its own parking lot in addition to 3 commercially owned lots within a block. 11 restaurants, 24 other retail shops, bank, post office, barber, doctor, dentist and florist are just a few of the many other services that make The Mart "a city within a city" for the 20,000 people who work there in quiet, air-conditioned comfort.

for further details, write:

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GAMA holds 16th annual meeting

gas appliance manufacturers set attendance record at two-day meeting held at the Drake Hotel in Chicago

THE nation's manufacturers of gas appliances met at the Drake Hotel in Chicago on April 16 and 17 for their 16th annual meeting, which was described by H. Leigh Whitelaw, GAMA managing director, as the largest meeting in the organization's history. Included in the two-day program was an important list of addresses, meetings of all of the individual product divisions, and a social program. The committee in charge of program planning included Leland M. Feigel, chairman, Servel Inc.; C. H. Rippe Jr., Hamilton Manufacturing Co.; H. E. Jalass, Cribben & Sexton Co.; H. E. Handley, Handley Brown Heater Co.; T. T. Arden, Grayson Controls Division, Robertshaw-Fulton Controls Co.; and L. A. Brand, Empire Stove Co.

Ruthenburg elected president

A new slate of officers for the coming year was elected, to take office in October. The selections included Louis Ruthenburg, Servel, Inc., president; A. B. Ritzenthaler, The Tappan Stove Co., first vice president; and J. F. Donnelly, A. O. Smith Corp., second vice president. Lyle C. Harvey, Affiliated Gas Equipment Inc., was re-elected treasurer.

Highlights of Monday's program included the president's address by Frederic O. Hess, president, Selas Corporation of America; the presentation of a new and expanded public relations program by Louis Ruthenburg and George Hammond of Carl Byoir & Associates; and the presentation of Meritorious Service Awards to thirteen industry members. The award presentations were made during the program of the President's Dinner on Monday evening, and were followed by an elaborate stage show presented in the Gold Coast Room of the Drake.

There was excellent attendance at Tuesday morning's session, to hear addresses by Harold Wess, director of Consumer Durable Goods Division, Office of Price Stabilization; Courtney Johnson, consultant to the National Production Authority on Controlled Materials Plan; and Cmdr. E. R. Blandin, representing the U. S. Department of Defense.

Beardsley Ruml talks excess profits taxation

The first featured speaker at Tuesday's General Session Luncheon was Beardsley Ruml, whose subject was "Management under the Excess Profits Tax". A second speaker for the luncheon session was George F. Mitchell, first vice president, American Gas Association, and president of The People's Gas Light & Coke Co. of Chicago.

GAMA launches new public relations program

In presenting the new public relations program which GAMA has launched, Mr. Ruthenburg reviewed the objectives of the Association and pointed to the long-range nature of industrial relations. A question to think of in this connection, he said, is "Where will the industry stand in ten years?"

The principal objectives of the new plan as outlined are six in number:

1. To preserve and build gas load
2. To build greater unity and cooperation in the equipment field
3. To make government aware of the importance of gas
4. To increase the stature and prestige of the industry
5. To develop more and better merchandising stimuli for distributors and dealers
6. To sell the public on gas and gas appliances.

Accepted public relations techniques will be used to pre-condition government bodies, utilities, and the public to act favorably on questions concerning gas.

Gas appliance production reaches $450,000,000

In his report to the group, Lyle Harvey, treasurer for the Association,

LOUIS RUTHENBURG, GAMA'S NEXT PRESIDENT

showed the vast growth in the production of gas appliances during the past four years. He cited the fact that in 1946 the value of products produced by the industry was $165,000,000, *at factory prices*. The comparable total for 1950 was $450,000,000.

Johnson explains CMP procedures

A clearly illustrated presentation by Courtney Johnson outlined the need for Controlled Materials Plan (CMP), the methods developed for putting the plan into operation, and suggested action to be taken by appliance manufacturers.

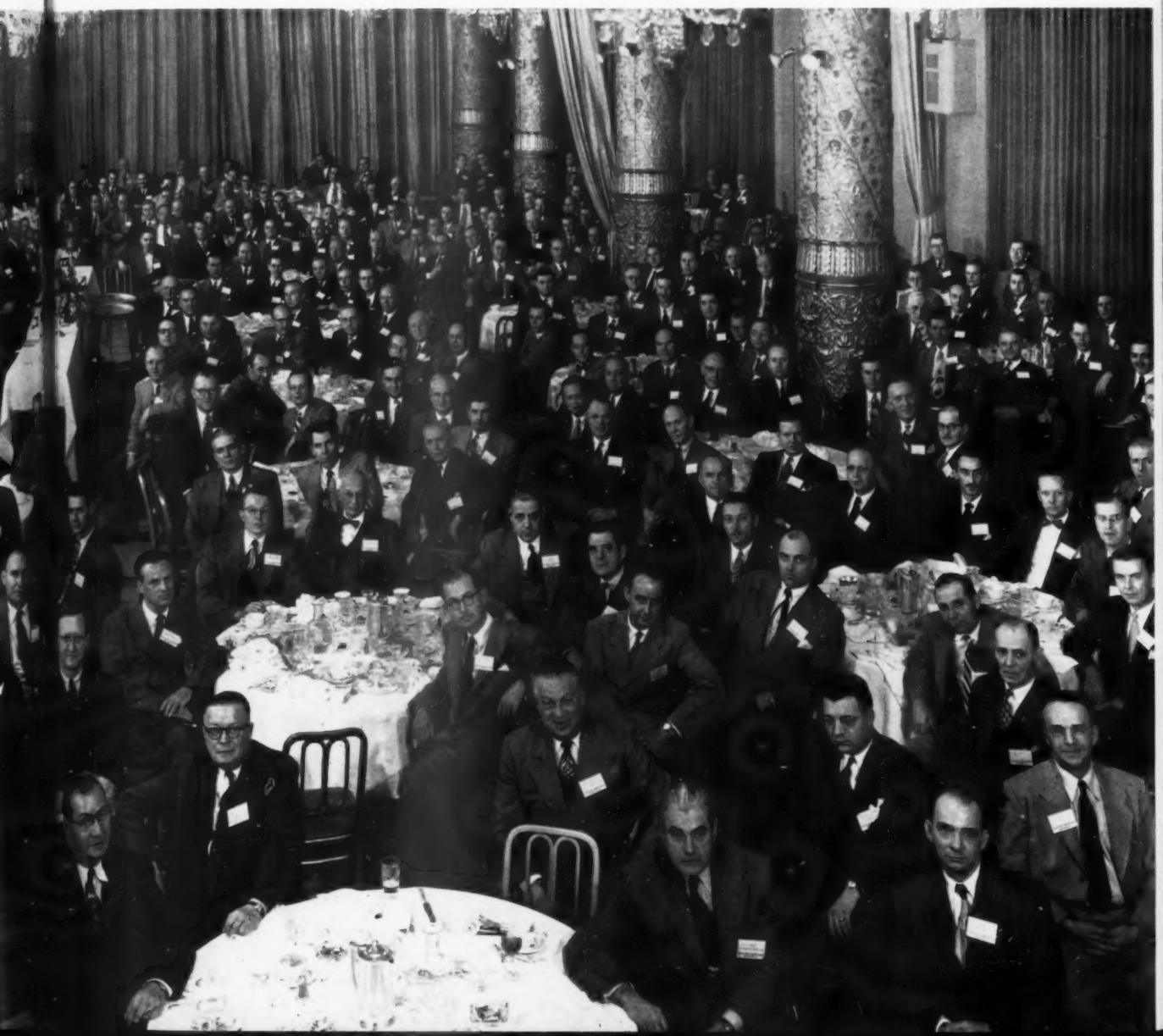
"CMP", said Mr. Johnson, "will supply the *necessities* for (1) military requirements and (2) products supporting the national defense." The point he stressed was that these "necessities" must be available in the right *quantities* at the proper *time*.

"Controlling Materials" in the plan are steel, copper, and aluminum.

DPA determines availability of materials—programs are *then* authorized and allotments of steel, copper, and aluminum are made to complete the plans.

The first function of CMP is to be sure that all *materials*, *components*, and *other factors* are available to build a needed product *when required*. It was pointed out that the first step in the CMP program is one of "measuring", with the second step dealing with "authorized programs."

The Controlled Materials division of NPA is to get information on ma-



terials available by class or specification. DPA and NPA can take action to balance supply and demand for materials by (1) increasing supply, (2) reducing non-programmed uses, and (3) reducing size of programs.

Claimant agencies must recommend and justify requirements. These claimant agencies include (1) the Defense Department, (2) NPA Bureau and divisions, (3) Atomic Energy, (4) Defense Transportation, (5) Petroleum Administration for Defense, etc.

Administration may be delegated to industry divisions of NPA.

The *Program Bureau* of DPA analyzes the programs and checks with the claimant agency—then recommends to the Requirements Committee.

The claimant agency issues lists of materials and issues DO ratings to the PRIME CONSUMER (prime contractor).

All products covered by CMP are classed as "A" or "B".

"A" products represent those of special design or for specific purposes, as used by a relatively small number of contractors. In this instance the prime contractor is given the rating for all materials used for a specific contract. (Examples of "A" products would be the military airplane or tank, or an automobile frame.)

"B" products represent those of general design, which are sold to many users—all "B" products are listed by NPA. (Examples of "B" products would be such items as nuts and bolts, ball bearings, cook stoves, washers, etc.)

"B" products *(appliances)* are assigned to their respective divisions.

"A" products are assigned to the appropriate claimant agency.

CONSUMERS (manufacturers) under CMP will be those given a definite production schedule. Only selected "A" and "B" products will be programmed. CONSUMERS must furnish a "bill of materials" required for their use, and also a listing of the "B" products required. These listings are to be furnished *only when requested.*

Frederic O. Hess, GAMA president, congratulates L. O. Reese, of Armstrong Products, on the receipt of a meritorious service award. This award, symbolic of industrial achievement, was presented also to 12 other industry men, including: John C. Diehl, American Meter; J. W. Farren, Ruud; Floyd Gaunt, Reynolds Gas Regulator; F. Donald Hart, Temco; Stanley H. Hobson, Roper; E. J. Horton, Robertshaw-Fulton Controls; H. E. Jalass, Cribben & Sexton; W. F. Muhlbach, Florence Stove; C. W. Nessell, Minneapolis-Honeywell; J. F. Ray, Selas; C. H. Rippe, Jr., Hamilton; and I. E. Seith, Forest City Foundries.

Under the new plan, all DO ratings will have equal standing. Only an NPA directive can take precedence over these DO ratings.

It is to be suggested that manufacturers refuse orders where there is not sufficient production to accept them without building up an illogical backlog.

Currently the work of CMP will be handled from Washington, but it is expected that field offices will be in a position to handle all applications by the fourth quarter.

The following is the routine as outlined by Mr. Johnson in connection with the development of applications.

1. Claimant agency submits requirements.
2. Claimant agency gives application to prime consumer. (It is expected that these will be available in June.)
3. Prime consumer enters application for a quarter's requirements.
4. Interim authorizations are given.
5. Claimant agency makes allotments to prime consumers.
6. Application is entered for succeeding calendar quarter.

Materials not absorbed in this manner will be termed "free materials." Free materials may be used for non-programmed products or open-end authorizations on programmed products.

The speaker emphasized that forms and information will be distributed, and urged that manufacturers refrain from writing to NPA.

Mr. Johnson stressed that the plan is *to promote production* and increase the national product, and *not* to restrict production.

The production springboard

Cmdr. E. R. Blandin, in his talk before GAMA, referred to the current effort in building defense production as the construction of a "springboard" from which full wartime production can be developed in minimum time. Said Cmdr. Blandin, "Mobilization planning only covers munitions of war and important components."

The "platform" should be complete by the spring of 1953, and it is expected that it will represent 20% of the national product at that time.

Procurement agencies are attempting to spread requirements across a

very broad base, to take care of the small businessman and avoid dislocations of industry. According to the speaker, 40% of the contracts are going to small business.

Sixth largest industry

George F. Mitchell urged even closer cooperation between the appliance manufacturers and the gas utilities. He referred to the gas industry as the nation's sixth largest, with an 8¾ billion dollar capital investment.

"Gas utilities", said Mr. Mitchell, "have always had a tendency to buy everything on price. There is some hang-over from this policy, but it bids fair to pass into oblivion and give way to modern and efficient appliance merchandising."

Mr. Mitchell credited Messrs. Hobson and Cuthrell with starting valuable conferences between top executives of utilities and manufacturers for mutual benefit.

The speaker voiced a plea for increased development work for the production of improved gas appliances, and additional research for everyone concerned.

"The utility should not be a *distributor* of gas appliances", Mr. Mitchell said. (Utilities need to help the dealers.) When utilities began to drop the merchandising of appliances, they had not properly prepared the way for 100% dealer handling.

"The dealer is very important to appliance sales, but the prime responsibility still rests on utilities and appliance manufacturers", Mr. Mitchell continued. He urged "proper education of doorbell-ringing salesmen" by manufacturers, distributors and dealers—this is the "real answer to healthy sales."

Use "cheap" dollars to safeguard the future

payment of excess profits tax is a sign of weak management

A REPORT ON AN ADDRESS by Beardsley Ruml BEFORE GAMA—TUESDAY, APRIL 17

BEARDSLEY RUML, noted economist and former chairman of the Federal Reserve Bank of New York, declared in an address ("Management under the Excess Profits Tax") that the payment of an excess profits tax by a company in 1952 will be "a presumption of managerial inadequacy".

Ruml urged management to study methods of minimizing tax consequences, and predicted that American business would plan to use tax-created "cheap dollars" for self-development and protection of consumers, employees and stockholders.

Ruml said that when President Truman signed a bill imposing an excess profits tax on business until July 1, 1953, he created "two kinds of money"—cheap earned dollars and expensive earned dollars—and forced a "profound change in the kind of business system we shall have in this country."

"Cheap earned dollars are those which, if not spent, will be taxed at high marginal excess profits rates," he said. "Expensive earned dollars are those which are taxed at ordinary rates."

Under the excess profits tax law, Ruml explained, the marginal rate is 77 per cent, giving the "cheap earned dollar" a value of only 23 cents. The ordinary rate is 47 cents; so the "expensive earned dollar" is worth 53 cents, more than twice as much as the cheap dollar. "If the marginal rate is increased still further," he added, "the cheap dollar will become cheaper still."

Besides its inflationary consequences, the existence of cheap dollars "makes prudent many business activities that would not be prudent except for the fact that the dollars expended are cheap," Ruml said, adding:

"The excess profits tax is therefore not a burden, but a subsidy. It provides cheap dollars to the profitable and established company, dollars which can and must be used by a responsible management to safeguard and to extend the position of such a company against competition.

"If a company is not in excess profits, if it is weak in earnings, or young, or with inadequate capital—in other words, if it has only expensive dollars in its arsenal—it is at a double disadvantage as against its entrenched rival with tax-created cheap dollars at its disposal."

The battle for markets, through better products, better coverage, better inventory stocks and better advertising and promotion, will be a battle between the cheap expense dollars and expensive expense dollars, and the cheap dollars will win because they can extend farther and take more risks, Ruml declared.

"Why, then, should even big business oppose the excess profits tax? Because," Ruml said, "all business wants to avoid putting tax considerations before market considerations; because when this happens, competitive enterprise based on efficiency and ingenuity in serving the public's demands will have been distorted by artificial and irrevelant factors which have nothing to do with skill in making and distributing the things and services that people want."

Ruml told the GAMA delegates that no tax system will work unless it is largely self-enforcing. The average taxpayer, individual or corporate, must feel that he is fairly treated; he must compute and pay his tax as a matter of conscience and duty, and must believe that by and large other taxpayers are not privileged.

An "evil brew of inequity, exception, exemption, and privilege," the excess profits tax, Ruml said, will

destroy the moral compulsions that are needed to make any tax system acceptable and efficient. Furthermore, such a tax is "harmful to investment and therefore to the building up of fixed assets necessary to an expanding economy," he stated.

Tax avoidance vs. tax evasion

Ruml urged serious consideration of the distinction between tax avoidance and tax evasion. "In the most unexpected quarters," he said, "the opinion is held that both are evil and contrary to the public interest." Stating his disagreement with this opinion, Ruml said:

"It is not only proper, but it is the duty of management to minimize by all lawful means the tax consequences of business decisions. It is a duty because management is a trustee for all parties at interest in the health and growth of the business—stockholders, workers, vendors, and customers.

"The individual may, if he so desires, pay more than the law requires. The injury is to himself alone. But management is not a free person. It is acting for others who depend on the business for products, wages, markets, and income."

Tax-oriented business management, Ruml said, must face an inevitable shift of emphasis in the carrying on of business enterprise. While urging business to use excess profits tax-created "cheap expense dollars" for purposes which bulwark it against future emergencies, Ruml warned management that "the wasteful use of cheap dollars is as blameworthy as the wasteful use of expensive dollars." Good faith on the part of management in the direction of a company's affairs is to be insisted upon whether expense dollars are expensive or cheap. . .

Reap the benefits in 1952

Prudent use of a double standard of expense dollars requires management to put its planning house in order at once, he said, "since the benefit to a company of cheap expense dollars must be gained principally in 1952."

"The year 1951 is too soon for most," Ruml remarked, "and the first half of 1953 is for many a little too late. Generalizations are dangerous, and exceptions will always occur, but I think a broad rule may be stated that the payment of an excess profits tax by a company in 1952 is a symptom of managerial inadequacy—not proof necessarily, but certainly a symptom that the planning and control of a company's affairs leave something to be desired."

Ruml told the GAMA convention that it is important for management to know as soon as possible and to what extent it will earn excess profits. Ability to forecast will enable business to plan optional programs that can be quickly put into operation, he said.

Comptrollers being constitutionally conservative, Ruml observed, they are inclined to underestimate year-end profit. "Formerly, this was a good practice, but under the excess profits tax, it may be extremely expensive," he added. "This is one of the number-one danger points for management."

Underexpenditure of as little as $100,000 for a self-development program, Ruml said, would cost a company $77,000 in taxes, "and the amount may be even greater if corporation income taxes are increased."

Optional-expense programs require speedy action

Ruml warned against letting "optional expense" (cheap) dollars become identified with ordinary expense dollars. The control of ordinary expense, he said, is a "separate and ancient problem." Optional-expense programs, he said, should be quickly started, quickly terminable, and should create no precedents, unless experimentation with a new development indicates that it might perhaps justify itself on a regular expense basis.

Production opportunities under the excess profits tax, Ruml pointed out, include research on new products and new designs, tooling up for new markets, reorganization of production flow, testing of old and new products under problematical conditions, importation of experimental skills, materials, and machines. "In fact, any current expense for economy or improvement of product that seems too speculative under ordinary tax circumstances may prove to be prudent for a management with cheap dollars at its disposal," he said.

Advertising and educational activity suggested

Consistent advertising, supplemented by extension of branch offices to uncertain areas, more intensive cultivation of customers, new developments in packaging, and greater knowledge of consumer response as against competition, were cited by Ruml as marketing advances made possible by cheap dollars. Sound public relations projects, including community, regional and national educational and welfare activities, might also be undertaken to produce lasting benefits to any company that has employees, customers, and stockholders, he added.

"Optional expense" (cheap) dollars will permit adequate staffing at the executive level, thereby lengthening training periods in anticipation of requirements, Ruml said, adding that many companies have been understaffed in this category for years "as evidenced by lack of time to participate in the formation of national policy of vital importance to business."

While conceding that it is difficult to foresee measures which may have to be taken affecting capital structure and capital items, Ruml advocated making all possible charge-offs for bad debts, obsolescence and depreciation; dividend payments partially in cash and partially in stock, acquisition of assets subject to mortgage, and timing the taking of capital gains and losses with excess profits tax considerations in mind. "The holding of state and municipal bonds will be examined with a jaundiced eye," Ruml added.

"OE" dollars for repair and maintenance

"Buildings and machinery will be repaired and maintained at great advantage over competition which has

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NEWS

RECORD TOTAL OF FREEZERS SOLD IN 1950 BY NEMA FIRMS

A record number of 645,151 home and farm freezers were sold by the 26 to 29 manufacturers reporting to the National Electrical Manufacturers Association during 1950, according to statistics revealed by NEMA.

These factory sales were 105% ahead of freezer sales during 1949, and 43% ahead of the industry's best previous year, 1948.

BENDIX CONSIDERS PRODUCING REFRIGERATOR

Production of a refrigerator by Bendix Home Appliances, Inc. is being contemplated, it has been revealed by W. A. Blees, vice president of Avco Manufacturing Corp., which now controls Bendix. Blees did not venture when production of Bendix refrigerators would begin.

BROOKER TO HEAD SEARS FACTORY DIVISION

Robert E. Brooker, a buying executive of Sears Roebuck & Co., will be appointed head of the company's factory division when E. P. Brooks resigns sometime this spring, it was announced recently.

It was stated that Brooks is resigning to become the first dean of a newly established school of industrial management at the Massachusetts Institute of Technology.

Sears has 20 wholly owned factories which manufacture such products as kitchen ranges, plumbing supplies, furniture, farm equipment, paints and wallpaper. The company has had factory investments since 1906, it was stated.

WITWER NAMED GP&F SUPT.

Geuder, Paeschke & Frey Company, Milwaukee, has announced the promotion of Harvey E. Witwer to the position of general factory superintendent.

Witwer started with the firm in 1929 as a timekeeper. From 1939 to 1945 he was a salesman in the contract manufacturing division, and from 1945 until 1949 was manager of the sales service division. In 1949 he was appointed manager of the planning department, which post he held until his recent promotion.

ASSISTANT TO ROY INGERSOLL

Appointment of Carl R. Brick as an assistant to Roy C. Ingersoll, president of Borg-Warner Corporation, has been announced.

Brick has served as the corporation's industrial training consultant for several years. Previously he was vice president in charge of industrial relations with Dealers' Transport Company, and during World War II, was a commander in the Navy.

AUTOMATIC GAS WATER HEATER SHIPMENTS CONTINUE HIGH

Shipments of automatic gas water heaters during February, 1951, approximated 215,000 units and were 37.4% greater than shipments of 156,500 units in February, 1950, according to GAMA statistics. Shipments during the first two months of this year are estimated at 443,100 units as compared with 288,100 units during the same period of last year.

PHILCO BUYS THREE NEW BEDFORD, INDIANA, PLANTS

Philco Corporation has purchased three new manufacturing plants in Bedford, Indiana, William Balderston, president, has announced.

Balderston said the plants are anticipated for government work, but will likely become a permanent part of Philco's over-all production facilities. The buildings, never before occupied, are of one-story, fireproof construction and are situated so that they may readily be conveyor-connected. He said the new acquisition will add about 175,000 square feet to Philco's over-all facilities of 4,200,000 square feet.

PLUMBING INDUSTRY EXPECTS BIG OUTPUT DURING 1951

The outlook for the production of plumbing fixtures in 1951 is good, according to the Plumbing and Heating Industries Bureau.

Production of many types of plumbing fixtures set an all-time record last year, the Bureau says.

While some curtailment in new residential construction is expected in 1951, it is believed that the increased demand for plumbing fixtures in the construction of cantonments,

bases, hospitals, schools, industrial plants, and modernization projects will more than off-set the lessening demand in new residential construction.

JARRETT GETS NEW POST AT WARD HEATLR

Russell R. Jarrett has been appointed vice president-sales manager of Ward Heater Company, Los Angeles, California, as announced by Cecil M. Dunn, vice president and general manager of The Estate Stove Comany, Hamilton, Ohio, and of Ward Heater Company, which was acquired by Estate in February.

Jarrett joined Estate in 1925 as a salesman. For the past fifteen years he has served as Pacific regional manager, having complete responsibility for sales of Estate products on the Pacific Coast and in the Intermountain territory as far east as Denver.

BORG-WARNER REPORTS GOOD NORGE ACTIVITY

A Borg-Warner report says plants of the Norge Division are operating at capacity in the production of its newly designed line of refrigerators, ranges, home freezers, washing machines and other home appliances.

"While the manufacture of war materials represents only a small percentage of the corporation's total output to date," say C. S. Davis, chairman of the board, and R. C. Ingersoll, president, "Borg-Warner currently is the recipient, both as prime contractor and as sub-contractor, of an increasing volume of war orders."

SHIPMENTS OF DOMESTIC GAS RANGES UP DURING FEBRUARY

Shipments of domestic gas ranges totaled 249,700 units during February, 1951, as compared with shipments of 209,000 in February, 1950, GAMA reports. This is an increase of 19.5%.

During the first two months of 1951 shipments of domestic gas ranges totaled 474,800 units, as compared with shipments of 374,000 units during the similar period of last year.

NASH-KELVINATOR TO BUILD ENGINES FOR AIR FORCE

Nash-Kelvinator Corporation has received a letter contract from the U.S. Air Force to build "large quantities" of Pratt & Whitney R-2800 "Double Wasp" aircraft engines. A large building program will supplement existing factory facilities. Engines will be assembled in Kenosha, Wisconsin.

Company president, George Mason, said ability to produce appliances and automobiles will not be impaired. Car and appliance production will continue.

HEADS ADVANCE STOVE

John S. Hopkins has been named president of Advance Stove Works, Evansville, Indiana, following the retirement of F. L. Erlbacher. Hopkins will also continue as purchasing manager, it was reported.

RHEEM NEW ORLEANS RECEIVES ARTILLERY "AMMO" ORDERS

Rheem Manufacturing Company has been awarded contracts for artillery ammunition totaling approximately $10,000,000, it has been announced by the Birmingham Ordnance District of the U.S. Army.

In addition to special machine tools being supplied by the Ordnance Corps, it is reported that Rheem already has placed orders for production equipment in excess of $3,612,000. An additional $277,000 worth of special tooling will be manufactured or purchased by Rheem for production of the shells and cases, and it is expected that an approximate 600 employees will be added at the New Orleans plant.

MATERIALS SITUATION CAUSES LEVELING-OFF IN HOME LAUNDRY APPLIANCE PRODUCTION

Although washer sales of 341,328 units in February were up 6.3 percent over 321,092 in January, they registered the first drop from the comparison month of the preceding year since November, 1949, being off .48 percent from 342,967 in February, 1950.

Dryers sold in February aggregated 36,851, compared to 31,935 in January, an advance of 15.4 percent, and 90 percent more than 19,389 in

Coleman gets home heating award *— W. C. Coleman, right, president of The Coleman Company, is shown accepting a 1951 merit award from R. W. Crinnian, national president of the American Society of Industrial Engineers. The award, the first made by ASIE to a manufacturer in home heating field, was for "leadership in research, engineering, design and safety."*

the comparison month of last year. Ironer sales in February totalled 32,400 units, 31.7 percent above 24,600 in the preceding month and 17.4 percent more than 27,600 in the comparison month of 1950.

CHICAGO STAMPERS TO TALK ON REDUCING PLANT NOISE

At the May 9 dinner-meeting of the Chicago District of the Pressed Metal Institute, the feature subject to be discussed will be "Minimizing Noise and Vibration in the Stamping Plant." Reservations for the meeting to be held at the Graemere Hotel, should be addressed to Northern Metal Products Co., 3300 W. Lake St., Chicago 24, Illinois.

CENTRAL ENAMELERS TO DISCUSS LOW PRESSURE SPRAYING

At the May 4 meeting of the Central District Enamelers Club, at the Allerton Hotel, Cleveland, Ohio, the following subjects will be discussed: "Low Pressure Spraying," by Roy Beck, of Binks Manufacturing Co., and "Modern Porcelain Enamel Furnace Design," by E. W. Dany, of Ferro Enamel Corporation.

As this is the Club's last meeting until Fall, new officers will be elected for the coming year, according to M. Bozsin, Club secretary-treasurer.

"MAGIC BOARD" INSTALLED IN MERCHANDISE MART TO DIRECT BUYER TRAFFIC

A unique device, an electrical guide, for directing pedestrian traffic to showrooms has been developed and placed in operation in Chicago's 93-acre Merchandise Mart, the world's largest commercial building, it was announced by Wallace O. Ollman, general manager.

The first of these "magic boards" is installed on the building's fifteenth floor (glassware, giftware, etc.). Similar direction boards are contemplated for other floors of the Mart, which boasts seven and one-half miles of corridors.

The board consists of a floor plan on which 150 tiny light bulbs represent as many showrooms. A yellow light indicates the exact corridor location of the buyer seeking information, and electrically lighted arrows indicate the most direct route a person should follow to reach any particular showroom on the floor.

Chambers three-burner unit — *Giant photo of new three-burner drop-in gas cooking top unit displayed by Chambers Corporation at gold medal exhibition of Architectural League, New York. It is included among 17 examples of "excellence in design in native industrial art." Charles W. Zemer, left, Chambers eastern divisional manager, is shown with Philip Johnson, chairman of the league's selection committee.*

APEX RECEIVES $10 MILLION IN DEFENSE SUB-CONTRACTS

Apex Electrical Manufacturing Company, with plants in Cleveland and Sandusky, Ohio, has undertaken a defense sub-contracting program involving more than $10,000,000 in orders to start with, according to an announcement by C. G. Frantz, president. At the same time, Frantz pointed out that Apex will continue to produce its regular line of home appliances in line with the ability to get raw materials.

The defense sub-contracting program will involve production of mechanical assemblies for the tank program in which Apex will be a supplier for the Cadillac Tank Plant, Jack & Heintz Precision Industries, American Car & Foundry, Bendix Aviation, and the U.S. Tank Arsenal. Apex will also make elevating and traversing mechanisms for airborne guns for the Aetna-Standard Engineering Co. Volume production on defense orders is not expected until next fall.

NEW USES COMMITTEE SEEKS PORCELAIN ENAMEL DEFENSE APPLICATIONS

New uses for porcelain enamel as a finish to permit substitution for critical metals is a goal set forth for the newly formed New Uses Committee of the Porcelain Enamel Institute.

A basic and long range program for the committee will be the research of entirely new applications for porcelain enamel as a finish for all types of products from industrial equipment and components to building products. A more immediate goal

will be the research of applications for porcelain enamel as a finish which will reduce or eliminate the necessity for critical metals such as copper, brass, and zinc. A typical example of this is pickling tank fixtures which have previously been made of special alloys but can now be produced in cast iron or forged steel finished in acid resisting porcelain enamel.

Actual experimental and development work on new applications will be carried out in the plants and laboratories of member companies on an assignment basis according to the interests and experience of the companies as related to the type of product. Defense applications are being given priority consideration. C. P. Lohman, of Pemco Corporation, Baltimore, is chairman of the committee.

ASTM COMMITTEE C-22 ON PORCELAIN ENAMEL SUBMITS FIRST TEST METHODS

The first proposed standard test methods covering properties of porcelain enamels were approved at a March meeting of ASTM Committee C-22. These methods and a glossary of terms will be referred to the American Society for Testing Materials for approval, probably at its annual meeting in June.

The five proposed tentatives which are now out to letter ballot in Committee C-22 before reference to the Society, are as follows:

Glossary of enamel terms

Tentative test method for sieve analysis of wet milled and dry milled porcelain enamels

Tentative test method for resistance of porcelain enameled utensils to boiling acid

Tentative test method for acid resistance of porcelain enamels (at room temperature)

Tentative standard test method for impact resistance of porcelain enameled utensils

At the main meeting of the committee progress reports were received on several investigations underway by subcommittees: a report with bibliography on methods of testing adherence of enamel to metal, the resistance of porcelain enamels to thermal shock, and properties of base metals influencing porcelain enamel.

Proposed test methods for the determination of reflectance, and resistance to abrasion and warping have reached a stage where final reports may be anticipated in the very near future.

Long range projects include such investigations as the effect of water analysis on enamel slips, and the correlation of existing literature on thermal shock testing.

Committee C-22 is one of the relatively new organized ASTM technical groups, having been officially formed late in 1949. Officers of the committee are Chairman W. N. Harrison, National Bureau of Standards, Washington, D.C.; and Secretary G. H. Spencer-Strong, Pemco Corp., Baltimore.

The next meeting of the committee will be held September 27 and 28, in Milwaukee.

FIVE SENSIBLE RULES FOR CONSERVING ALKALINE CLEANERS

1. ***Use double-tank cleaning.*** By using two tanks for cleaning, most of the heavy grease and soil are left in the first tank. Then the second tank can clean the parts more thoroughly and rapidly. Further savings can result by transferring the second tank's contents to the first, when the first tank becomes exhausted — rather than dumping both at the same time.

2. ***Save cleaner.*** Use alkaline cleaner at lower limit of concentration instead of "over-dosing". Raise bath temperature for more efficient cleaning action. Reduce drag-out losses. Accurate control of pH and additions should be maintained.

3. ***Skim off surface of bath.*** This reduces re-contamination of the cleaned parts as they leave the bath.

4. ***Use concentrated cleaners.*** Save space, time, containers. Control is easier with smaller additions.

5. ***Practice good "house-keeping".*** Check and maintain pressure and temperature controls, valves, spray nozzles, electrical contacts. Descale steam coils, pipes and tanks to increase heat transfer and pumping efficiency. Watch for losses through leaks, drag-out or slop. Recover any "lost" parts from bottom of tanks to prevent bath contamination.

COURTESY PENNSALT SPECIAL CHEMICALS DIVISION

ESTATE STOVE APPT.

Gordon R. Kemp has been appointed assistant general manager of The Estate Stove Company, Hamilton, Ohio, it was announced by Cecil M. Dunn, vice president of Noma Electric Corp., and general manager of its Estate division. It was stated that Kemp will continue to fulfill his former functions of controller and credit manager.

RWMA PRIZE PAPER CONTEST CLOSES JULY 31, 1951

The Resistance Welder Manufacturers Association reminds all participants in their Prize Paper Contest that entries must be received before July 31, 1951.

The contest provides an opportunity for those in the industry or engaged in laboratory research work to compete for a first prize of $750, second prize of $500, and a third prize of $250. University instructors, graduate students and research fellows are eligible to compete for a $300 first prize and $200 second prize. Undergraduate students may submit papers for a $250 prize. The contest is open to anyone, without

Use the right FOUNDATION for durability

PERMANENT bridges require a strong, structurally sound foundation. Permanent porcelain enamel finishes require "the right foundation" too, and that means the right ground coat — one that has the adherence or "grip" to insure a strong, everlasting bond between the cover coat enamel and the metal base.

Century makes cover coats — in fact, a complete line of enamels for all production work on steel or cast iron. But we say first "start right from the steel out" by using Century ground coats, regardless of the cover coats you use. Use the ground coat enamels that are economical to buy and easy to work in the enameling plant, and that give everlasting protection to your products in the field.

Some of the country's largest production plants, and small plants too, have used many millions of pounds of Century ground coat enamels, and swear by them after years of use. New customers are just as enthusiastic. Try Century ground coats and you will be a booster too.

FRIT from CENTURY FRIT MASTERS

CENTURY VITREOUS ENAMEL COMPANY

• 6641-61 S. Narragansett Ave., Chicago 38, Ill. •

restrictions, in the above categories located in the United States, its possessions, and Canada.

For complete details, write the Resistance Welder Manufacturers Association, 1900 Arch St., Philadelphia 3, Penn.

AMERICAN STOVE '50 SALES UP 46%

American Stove Company's net earnings after all charges for the year ending December 31, 1950, were $1,290,943 or $2.39 per share, according to the firm's annual report. Net sales for the year 1950 amounted to $29,025,522 as compared with $19,812,840 in 1949, an increase of more than 46%.

Current liabilities are listed at $3,798,421 and current assets at $13,-972,162. All short-term loans, which on January 1, 1950, amounted to $750,000, were paid off in April, the report states.

Arthur Stockstrom, American Stove president, reports that in addition to three contracts covering rocket head assemblies, fuel tanks for fighter planes, and large capacity fire bombs, the company has obtained contracts for large quantities of its regular commercial cooking equipment. The production of these defense items will not interfere with production of civilian goods.

APRIL 28th
POST
First of a new series promoting
FIBERGLAS* products
Oven's-eye-view of the worlds best cook!
FIBERGLAS is in your life for good!
Promotion like this is one more reason why Fiberglas Insulation is
A swell feature to have...
A swell feature to sell...
FIBERGLAS INSULATION MADE BY
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JAMES HEALY TO A.O. SMITH CORP.

James H. Healy, who will receive the degree of Doctor of Philosophy in Engineering in the Department of Ceramic Engineering at the University of Illinois, in June, 1951, recently reported for work at A. O. Smith Corporation, Milwaukee. Healy will be in the research department, specializing in porcelain enamels. His doctorate thesis was "A Study of Adherence Phenomena of Enamels for Sheet Iron". *(See "Cobalt Reduction Theory of Sheet Iron Enamels," by Mr. Healy and Prof. A. I. Andrews, December 1950* finish.)

RHEEM AIRCRAFT DIVISION SIGNS NEW LOCKHEED CONTRACT

Rheem Manufacturing Company's Aircraft Division has signed a contract with Lockheed Aviation Corporation for the fabrication and assembly of components of the Navy's P2V-6 patrol bomber. Lockheed has also increased a previously announced contract with Rheem to include several additional components of the T-33 jet trainer and the F-94 all-weather fighter.

Work on tooling will be started immediately at Rheem's South Gate, California, plant. Fabrication and assembly are scheduled to begin at the company's new Aircraft Division plant at nearby Downey, California, in July.

ALLEMANG APPOINTED VICE PRES. OF PHILCO EXECUTIVE STAFF

Herbert J. Allemang, a management consultant, has been appointed vice president–executive staff of Philco Corporation, it was announced

by William Balderston, president.

Allemang in his new capacity will head the forward planning program of Philco. For the past 13 years, he was a senior partner of Stevenson, Jordan & Harrison Inc., well known firm of management consultants. During the past two years, he took an increasingly active part in consultation on long-range planning for Philco.

AMERICAN STOVE ASSIGNMENTS

Appointment of John M. Bayer as regulations and priorities manager

JOHN M. BAYER

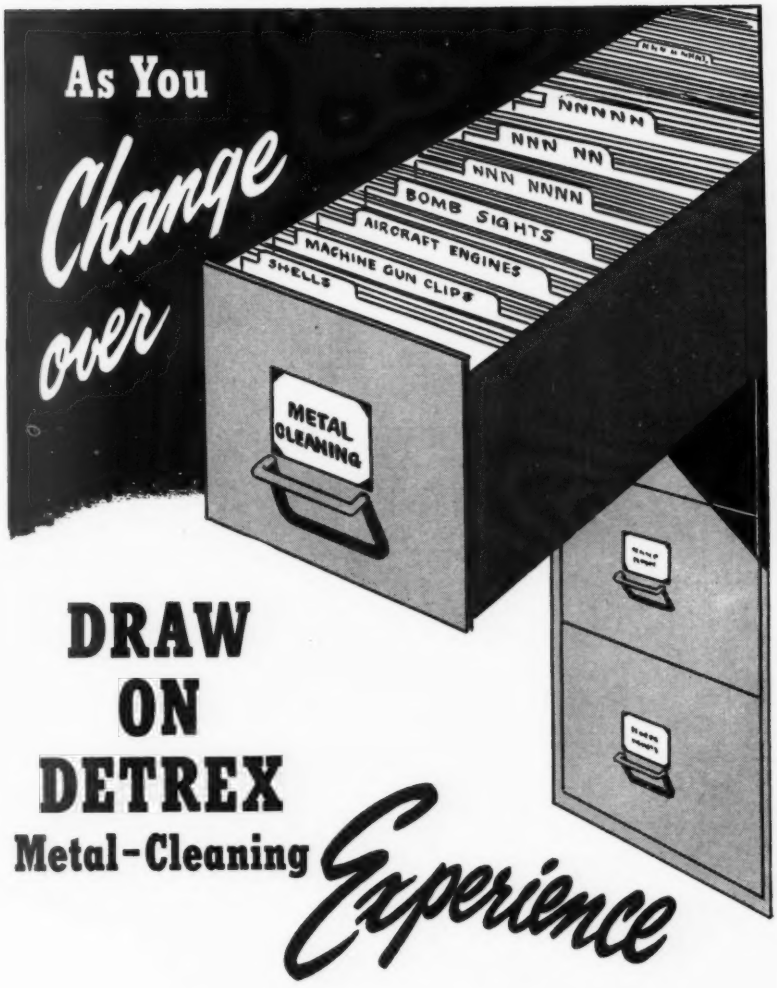
of American Stove Company has been announced by George P. Eichelsbach Jr., vice president in charge of manufacturing. Simultaneously, it was announced by Marc W. Pender, vice president in charge of sales, that Ambrose R. Pierce will replace Bayer as manager of the company's Lorain sales division.

Bayer, who has been with American Stove Company 25 years, had similar duties during World War II. Pierce also has been with the company 25 years. He has been manager of the Coal, Combination, and Kitchen Heater Range Division since 1938.

ALCOA SUBSIDIARY OFFERS SUB-CONTRACT FACILITIES

Government contracts and subcontracts for defense production are now being actively sought by Aluminum Seal Co., Inc., Richmond, Indiana, a major producer of vital ordnance parts during World War II.

The company, a wholly-owned



DRAW ON DETREX Metal-Cleaning Experience

In converting to defense work call your Detrex Service Engineer. He is prepared to assist you in meeting specifications.

Through him, you obtain the information required to plan your production steps. You may need only slight alteration of your present equipment to handle your new production. Or, if necessary to go to a different method, whatever the application or process, Detrex is prepared to provide equipment and chemicals.

With this information at hand, you will be able to boost production.

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105A

DETREX DETROIT MICH.

DETREX Corporation

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subsidiary of Aluminum Company of America, recently established a defense production division capable of designing and producing mass quantities of metal ammunition components ranging from detonator cups and fuse assemblies to high-speed, fully automatic ordnance assembly machines.

Previously located at New Kensington, Pennsylvania, the firm produced detonator discs, relay cups, primer cups, metal ration containers, fuse assemblies and similar parts during World War II.

An illustrated brochure describing the company's facilities and operations may be obtained by writing *finish*.

NEW "PRECIOUS METALS" FIRM

Formation of Sel-Rex Precious Metals, Inc., 229 Main Street, Belleville, New Jersey, was recently announced by Morris M. Messing, president of Bart-Messing Corporation.

The new company will provide a wide variety of precious metal salts and solutions of gold, rhodium and silver.

Officers of Sel-Rex are M. M. Messing, president; S. G. Bart, secretary-treasurer; and E. C. Rinker, technical director.

NEW CONLON DIVISION SALES MANAGER

A. T. Blakemore has been appointed general sales manager of Conlon-Moore Corporation's Conlon division, manufacturer of household washers, dryers and ironers, according to announcement by Bernard J. Hank, president.

Blakemore has been a division sales manager of the concern since 1945. Prior to that he was assistant to the president of Meadows Division of Thor Corporation, and earlier was connected with General Electric Company, and the Frigidaire Division of General Motors Corporation.

PENNSALT FORMS INDUSTRIAL CHEMICAL DEPARTMENT

Pennsylvania Salt Manufacturing Company has formed a new sales department, the industrial chemicals department, combining the former heavy chemicals and special chemicals departments, it was recently announced by William P. Drake, vice president.

The new department will be headed by Albert H. Clem, formerly assistant to the vice president in charge of sales. Previously, Clem was a field representative and then assistant sales manager of the special chemicals department. Clem will report to R. S. Roeller, assistant general sales manager.

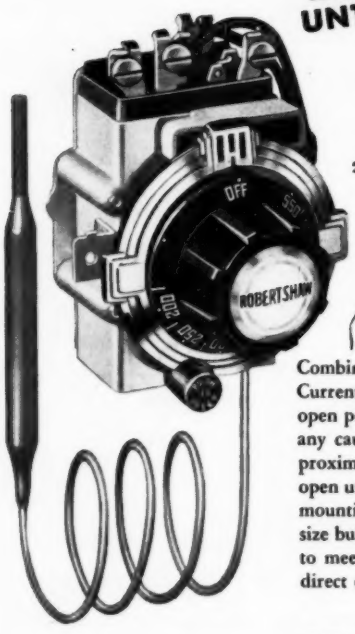
District sales managers appointed for the new department are J. M. Davidson, Philadelphia; C. M. McCloskey, Paterson, N.J.; Donald Macfarlan, Detroit; W. P. Snelsire, Pittsburgh; John C. Hampson, Chicago; Donald W. Graham, Cincinnati; and C. H. Anderson, Appleton, Wis.

William J. Hennessy, formerly Pittsburgh district sales manager of the special chemicals department, has

THIS Robertshaw® THERMOSTAT AUTOMATICALLY

CUTS OUT AT OVER TEMPERATURE

STAYS OUT UNTIL MANUALLY RESET



1 CYCLES AS THERMOSTAT

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3 STAYS OUT UNTIL MANUALLY RESET

Combines temperature control with single pole switch. Current is automatically cut off and switch is locked in open position if temperature at any dial setting, through any cause, exceeds temperature range of control by approximately 7% in liquids or 12% in air. Switch remains open until closed by manual reset button. Design permits mounting control in any one of four positions. Standard size bulbs and capillary tube lengths give great flexibility to meet required heat ranges and installation needs. In direct or reverse acting models.

Write for full information.

In Home and Industry *EVERYTHING'S UNDER CONTROL*

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THERMOSTAT DIVISION

ROBERTSHAW-FULTON CONTROLS COMPANY

YOUNGWOOD, PENNSYLVANIA

been appointed sales supervisor for industrial cleaners for the new department and has been transferred to the Philadelphia office.

Edward M. Wilson, formerly district sales manager for heavy chemicals in the Philadelphia office, was also appointed assistant to the vice president in charge of sales with supervision of all Pennsalt sales to the Government.

COWLES APPOINTS WOLEBEN

George R. Woleben has been appointed to handle sales and service work in the state of New York for Cowles Chemical Company's metal cleaner department.

Before joining Cowles, Woleben was a metallurgical microscopist in a supervisory capacity controlling quality of steel in process by Allegheny Ludlum Steel Corp.

SEYMOUR PRESTON TO SAUNDERS

Seymour Preston, formerly in the sales department of International Nickel Company, is now associated with Alexander Saunders & Company, in New York. Preston will represent the Saunders firm in the sale of equipment and supplies for the industrial precision casting process.

PEI PROCESS DEVELOPMENT COMMITTEE INITIATES CONSTRUCTIVE PROGRAM

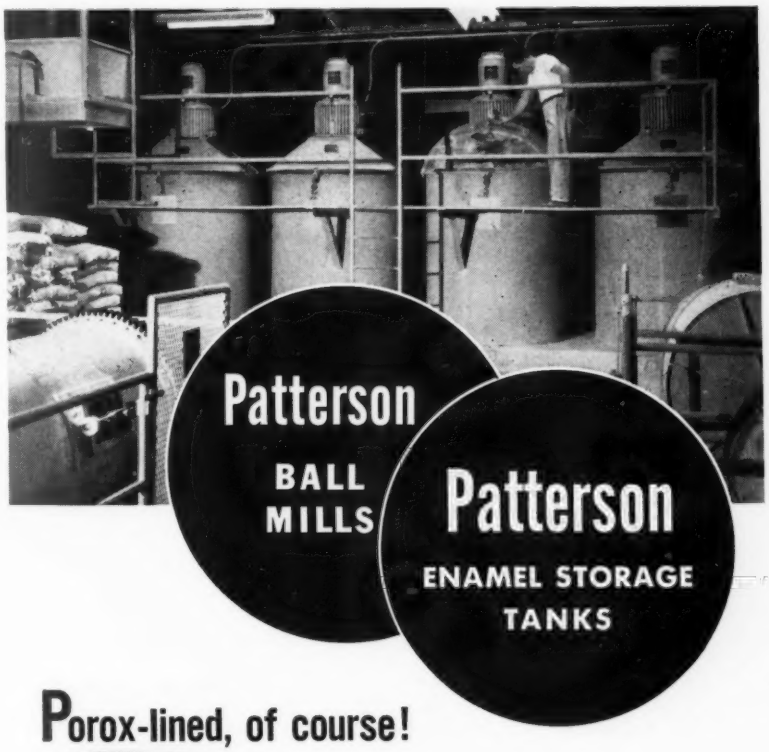
The Process Development Committee of the Porcelain Enamel Institute is planning a comprehensive program of correlation and dissemination of information on the latest advancements in plant processing techniques.

The committee, as appointed by PEI president, R. A. Dadisman, consists of: John McLaughlin, chairman, Chicago Vitreous Enamel Products Co.; R. J. Baker, Frigidaire Division of General Motors; Paul Cecil, Strong Manufacturing Co.; M. B. Gibbs, Inland Steel Company; H. B. Gray, Vitreous Steel Products Co.; H. P. Juncker, Servel, Inc.; L. W. Lammiman, The DeVilbiss Co.; J. F. Matejczyk, The O. Hommel Co.; W. Mickey, Barrows Porcelain Enamel Co.; J. B. Simons, Westinghouse Electric Corp.; and Edw. Mackasek, Porcelain Enamel Institute.

Assignments have been made to committee members on specific subjects which are to be studied immediately. Resulting material will be correlated, screened and finally released through the committee chairman and PEI headquarters in Washington.

Early assignments of topics include such subjects as: "Materials Handling in the Porcelain Enamel Plant" — broken down into handling of various materials from steel and frit to clay and chemicals; "Conservation of Porcelain Enamel Materials Through Proper Spray Control"; "Dipping Techniques for Titanium Opacified Cover Coats"; "Enamel Plant Organization", etc.

It is expected that the work of the committee will result in more general use of technical and practical advancements with resulting benefit to the entire enameling industry.



Porox-lined, of course!

The fine operating performance of Patterson Mills and Storage Tanks is complemented by POROX's safeguard against product contamination. Patterson POROX Lining Blocks and Grinding Balls are hard, dense, tough, non-absorptive and non-staining—your product comes out as clean as it went in! *Check with Patterson on your enamel preparation needs.*

Richard L. Cummings
PRESIDENT

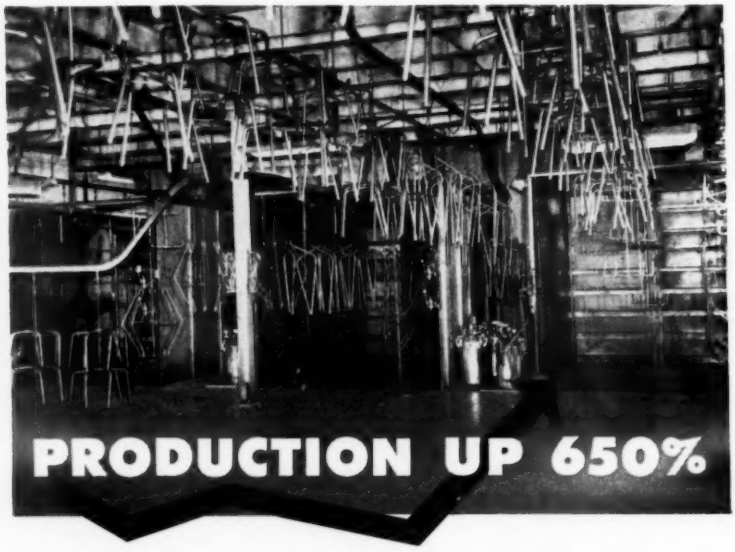
The Patterson Foundry and Machine Company
East Liverpool, Ohio, U. S. A.
NEW YORK, BOSTON, PHILADELPHIA, PITTSBURGH, DETROIT, CINCINNATI, ST. LOUIS, CHICAGO, HOUSTON, DENVER, LOS ANGELES, SAN FRANCISCO, SEATTLE
The Patterson Foundry and Machine Company, (Canada) Limited
Toronto, Canada
MONTREAL

Robert C. Becherer was elected vice president of Link-Belt Company at a recent meeting of the board of directors. All officers who served last year were re-elected.

Link-Belt Company has appointed Harry G. Andersen district manager at Birmingham, Alabama, with headquarters in the Comer Building, 2100 Second Avenue, N. Andersen was formerly district sales engineer at the company's Milwaukee, Wisconsin, location.

At the annual meeting of stockholders of E. F. Houghton & Co., Philadelphia, company officers and directors were reelected.

E. F. Houghton & Co., Philadelphia, manufacturers of oils, metal working products and mechanical leathers, recently announced the appointment of Carlos H. Mercado as manager of the foreign sales department. Mercado succeeds L. J. Norris who retired because of ill health.



Rate of production jumped 650% when one eastern manufacturer of metal furniture switched from hand spray to a conveyorized system and RANSBURG ELECTRO-SPRAY. The modern electro-spray process enables this manufacturer to do in a little over 2 hours what formerly required 16 hours!

ALSO ACHIEVED WITH THE RANSBURG INSTALLATION

PAINT SAVINGS—60% reduction

LABOR SAVINGS—4 men made available for other work

QUALITY—Eliminated retouching. "Get far better job"... "Superior finish."

Want to know what we can do for you? Ransburg engineers will analyze your specific painting requirements. No obligations, of course.

Electrostatic Painting Processes

RANSBURG ELECTRO-COATING CORP.

Indianapolis 7, Indiana

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PLUMBINGWARE SALES RISE IN LAST QUARTER OF 1950

Manufacturers' shipments of porcelain enameled steel plumbing fixtures during the fourth quarter of 1950 were valued at approximately $18,500,000 according to the Porcelain Enamel Institute. The Institute reports that Bureau of Census figures just released show this to be a slight increase over the third quarter of 1950 and a dollar increase of 50% over shipments during the fourth quarter of 1949. Steel plumbing fixture shipments accounted for 19% of the plumbing fixture industry's fourth quarter total.

In terms of units, fourth quarter shipments of porcelain enameled steel plumbing fixtures included 85,553 lavatories, 324,540 kitchen sinks, 134,687 bathtubs, and 21,398 shower stalls. The total of 566,178 units represents a slight decrease from the third quarter of 1950, although lavatory shipments increased approximately 9,000 units.

FERRO SALES UP — NAME CHANGE ANNOUNCED

Ferro Enamel Corporation, including 25 subsidiaries, divisions or affiliates, reported net income of $2,211,147, after taxes, for the year 1950, equivalent to $4.81 per share on 459,296 outstanding shares of common stock. This compares with 1949 net of $972,983, or $2.33 per share on the 417,542 shares then outstanding.

Consolidated sales, domestic and foreign, for 1950 totaled $33,445,186, compared with $24,660,998 in 1949, and $29,315,060 in 1948.

The company's dollar income from foreign subsidiaries in 1950 was $440,028, against $273,565 in 1949.

Officers of the corporation recommended that action be taken at the annual meeting of stockholders (April 17) to increase the number of authorized common shares from 500,000 to

1,000,000 and to change the company's name to Ferro Corporation. These steps, said the letter to stockholders, would prepare Ferro "to take advantage of future growth opportunities" and, at the same time, would recognize the expanded activities of company divisions in fields other than porcelain enamel.

RUDOLPH STAUD DIES

It is with deep regret that we report the death of Rudolf William

Staud who passed away March 28, at St. Francis Hospital, Evanston, Illinois, after several weeks' illness.

Mr. Staud was an executive of Benjamin Electric Manufacturing Company, Des Plaines, Illinois, and one of the leading figures in the lighting industry. He was affiliated with the Benjamin Electric Manufacturing Company as director of public relations and sales promotion since 1927.

For many years Mr. Staud participated in industry-wide activities relating to the improvement of lighting practices and lighting equipment. He served the RLM Standards Institute as president since 1936. He was a past president of the Illuminating Engineering Society (1947-48), the National Industrial Advertising Association (1930-31) and the Porcelain Enamel Institute (1932). He was a director of the Chicago Lighting Institute.

NEW BINKS OFFICE IN NEW YORK

The Binks Manufacturing Company, makers of spray guns, spray finishing equipment, cooling towers, and spray nozzles, has established a new office in New York. The Binks Building is located at 22-01 41st Avenue, Long Island City, just across the East River from Manhattan at the Queensboro Bridge.

The new, larger quarters have 6,000 square feet of floor space, enabling Binks to carry a complete stock of equipment in the New York area, according to Ed Cremer, sales engineer and manager of the new office. Special emphasis will be placed on technical service to customers, he said.

Other Binks personnel in the New York office include John George, Robert Rorden, and Bernard Loomis.

ENAMEL PRODUCTS, SHEPHERD CHEMICAL JOIN PEI

The Enamel Products Company, Cleveland, Ohio, and Shepherd Chemical Company, Cincinnati, Ohio, have

"ONCLE THUD SEZ *VEDOC* DEFENSE PAINT IS JEST ABOUT OUR BEST PROTECTION"

Uncle Thud's been getting around lately, for it's true. You just can't beat VEDOC Defense Paint for a good protective finish.

With our World War II experience to draw from, our research staff has been busy finding new and improved ways to give you the very best in government specification finishes . . . finishes that work best with your own coating methods. And we've expanded our production facilities to serve you quicker . . . more efficiently.

Whether your orders are for gallons or drums, each one receives the same prompt and thoughtful attention that has helped Ferro build a reputation as a good, dependable source of supply.

When you bid on Defense Orders calling for specification finishes, let us help you. Write to Ferro for quotations and assistance on any Defense Paint problems.

Remember, Ferro is set up to provide Complete Organic Coatings Service. From the development of diversified protective coatings—to the designing and installing of efficient finishing oven systems.

FERRO ENAMEL CORPORATION
LIQUID PLASTICS DIVISION
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become members of the Porcelain Enamel Institute, it was announced by D. H. Malcom, chairman, PEI Development Committee.

According to Malcom, there is an increasing interest in PEI membership because of the active government business program now being sponsored by the Institute. This program is aimed at aiding enamelers in selling the defense organization on where and why to use porcelain enamel, and also to give immediate and practical aid to members in obtaining defense prime- and sub-contracts for enameling work and other types of metal fabrication.

NEW U.S.S. TESTING DEVICE TO SAVE TONS OF TIN

U.S. Steel scientists have combined Geiger counters and X-rays to produce an automatic testing device that will save many tons of scarce tin annually.

One of the new testing machines went into operation recently at the the Gary Sheet and Tin Mill. Others are being used in the company's Irvin works in Pittsburgh; the Pittsburg, Calif., plant of Columbia Steel; and the Birmingham plant of Tennessee Coal, Iron and Railroad company.

Enough tin plate will be saved annually with the new testing method at the Gary plant to manufacture 1,000,000 tin cans.

The new instrument, the report states, measures X-rays reflected from the steel sheet to determine the thickness of the tin coating. The machine is the result of extensive investigation aimed at finding a more accurate and economical way to test the uniformity of the coating.

LAWNDALE ENAMELING EXPANDING FACILITIES

Lawndale Enameling Company, Chicago, manufacturers of sinks and processors of other porcelain enameled products, is expanding production facilities, according to Arthur M. Lander, president.

A 9,000-square-foot building addition immediately adjacent to the present plant is now under construction, with operations scheduled to begin about June 1. This building will house a new continuous furnace for the production of porcelain enameled products.

"Production capacity in the new plant will greatly exceed our present capacity," said Lander. "A new conveyor system will simplify the handling of parts."

ALUMINUM COMPANY EXPANSION

Two major programs were announced by Alcoa in 1950 which will increase the company's production of defense aluminum by about 50 per cent annually. The first, a "quick action" plan, is already operating and providing aluminum to the national stockpile through the use of standby facilities and high-cost electric power. The second program involves the erection of permanent new capacity capable of producing 240,000,000 pounds of aluminum annually.

as simple as **A·B·C**

These components for the completely enclosed pipe-line type FerroFilter shows its simplicity of design. Simplified design, careful workmanship, and the finest materials are combined in an extremely effective electromagnetic separator that will give you long, trouble-free service.

To get the clean sparkling enamel finishes you want for your finished product, you *must* have clean, iron free enamel slips. Thousands of feet of magnetized edges of the FerroFilter grids form a protective wall against iron contamination.

The pipe-line FerroFilter will fit into your dip tank circulating system, and your mill unloading or liquid transfer systems to give you the protection you need. Gravity type FerroFilters are available for general use where a closed system is not required.

No modern enameling plant can afford to operate without adequate FerroFilter protection. They represent the lowest cost finish insurance you can buy.

For detailed information send for bulletin #54

Authorized Representatives for the Enameling Industry

Chicago Vitreous Enamel Product Co., 1425 So. 55th Court, Cicero 50, Ill.
Ferro Enamel Corporation, 4150 East 56th Street, Cleveland 5, Ohio

S. G. FRANTZ CO., Inc. Dept. F P.O. Box 1138 Trenton 6, New Jersey

A. O. SMITH TO MAKE B-47 LANDING GEARS IN TOLEDO

A. O. Smith Corp. has announced that it is rehabilitating a 300,000 square foot plant in Toledo, Ohio, for the production of landing gears for the B-47 bomber, as a sub-contractor for Boeing.

PERFECTION NAMES NEW PRES.

At the annual meeting of the board of Perfection Stove Company, D. S. Smith, executive vice president and treasurer, was elected president and chairman of the board, following the retirement of L. S. Chadwick.

HUNTER HEADS ELECTROCHEMISTS

As a result of the annual mail ballot, Ralph M. Hunter and Marvin J. Udy were elected president and vice president, respectively, of The Electrochemical Society. Their terms of office began April 12 during the 99th meeting of the Society in Washington, D. C.

Hunter is manager of the electrochemical division of Dow Chemical Co., and Udy is a consulting engineer in metallurgical and electrochemical engineering.

PORCELITE INCORPORATES

Porcelite Company, Cleveland, Ohio, has announced its incorporation as The Porcelite Company, Inc. Facilities have been expanded with equipment for fabrication of architectural porcelain panels and channel letters.

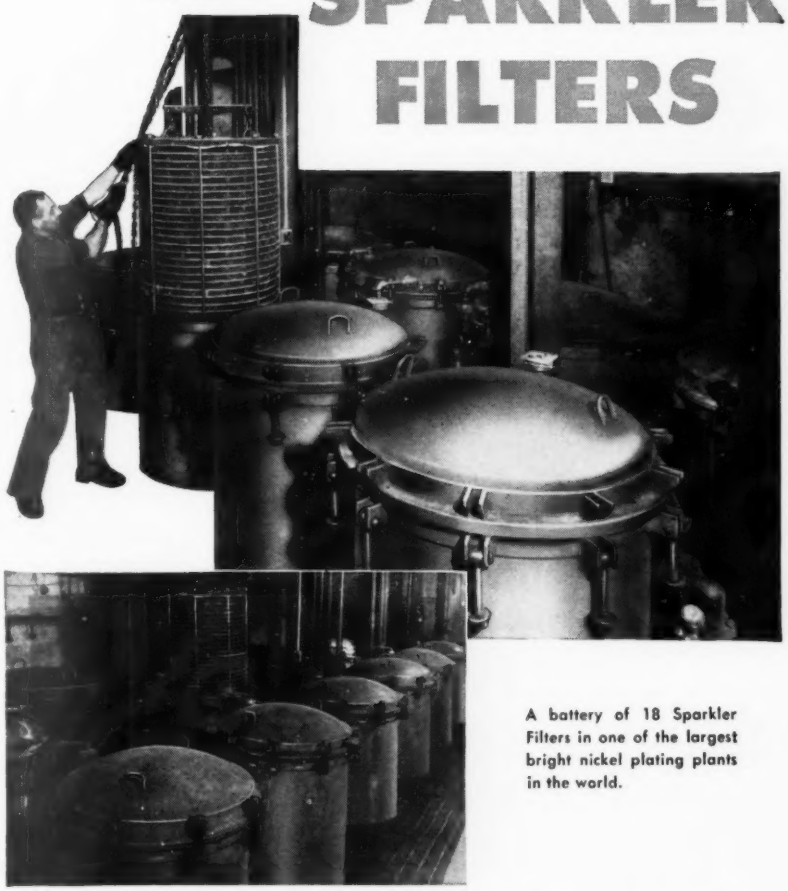
Norman J. Philpott is president of the firm, and Robert F. Kurfis, chief engineer. C. S. Thompson, formerly manager of the architectural division of Enamel Products, joined the company May 1 as sales manager.

SEAPORCEL WEST COAST PLANT

M. J. Salton, president, Seaporcel Metals, Inc., Long Island City, has announced the opening of a new plant on the West Coast under the name of Seaporcel Pacific, Inc., Long Beach, California, with Douglas B. McFarland vice president and general manager.

NO SHUT DOWN

To Carbon Treat Solution with SPARKLER FILTERS



A battery of 18 Sparkler Filters in one of the largest bright nickel plating plants in the world.

Carbon treatment without shut down is accomplished by cutting out one or two units in a battery of filters, removing the cartridge assembly of filter plates, and replacing with a new plate cartridge dressed with clean filter paper. The proper amount of carbon is mixed with water in a standby tank and recirculated through the filter thus depositing the carbon on the new plates in a cake of uniform thickness and density. The solution requiring a carbon treatment is then circulated through the carbon beds giving the plating solution the carbon treatment without contaminating the tank or stopping plating operations.

The quick change feature of the plate cartridge in Sparkler filters permits replacing a set of plates in a matter of minutes. Production can be resumed without appreciable interruption.

Sparkler Horizontal Plate Filters give absolutely sharp filtration at all stages of the cycle.

SPARKLER horizontal plate FILTERS

SPARKLER MANUFACTURING CO.
Mundelein, Illinois

Metal stampers discuss conversion problems and military procurement

(Continued from Page 35)

noon was devoted to today's important problem of "Conversion for Ordnance." Moderator was Frank Humberger, general manager, Technical Metal Processing Co., Cleveland.

Speakers and their subjects included: James Leake, president of The Leake Stamping Company, Monroe, Michigan, on "How Modern Stamping Techniques Can Aid Conversion" *(see page 23)*; Lawrence Jacobsmeyer, vice president, Salkover Metal Processing Co., Chicago, on "Copper Brazing as Applied to Ordnance and Aircraft Work"; A. W. Swift, engineering department, Handy & Harman, New York City, on "Silver Brazing as Applied to Ordnance and Aircraft Work"; and Howard Ronfeldt, vice president, Ronfeldt Associates, Toledo, on "Conversion for Ordnance."

At a special luncheon session on Friday, Harry Blythe spoke to the stampers as a consultant and advisor to the Chairman of the Munitions Board, on Small Business Problems. Blythe is also president of STD, Inc., of Alliance, Ohio, a firm specializing in stampings, tools and dies.

Small business and defense

In discussing the part played by small business concerns in the Defense Program, Blythe used as an example prime contracting and sub-contracting during World War II.

First of all, he said, there were 5,300,000 items manufactured during World War II, with the prime contracts for these items mostly in the hands of 271 corporations. Some 63 per cent of the total dollar volume did go to those prime contracts, but those 271 prime contractors sub-divided over 50 per cent of that volume.

As an example of the importance of sub-contracting, Blythe cited the case of Goodyear Aircraft of which he was general manager during World War II. This company had over 1600 sub-contractors during the last war.

How to secure information on defense contracts

As for securing information on Defense contracts, Blythe pointed out that in the Office of Small Business in Washington, D. C., there is a Central Military Procurement Information Office. At this central place, said the speaker, small business can go to find out what is going on in the Military, what the Department of Defense is procuring, and where to call upon the right people to see about the procurements.

The outcome of setting up this central office, said Blythe, was the developing of *a synopsis of bids*, so that now the Chamber of Commerce in every town receives a listing every day from the National Chamber of Commerce which tells what is going to be procured by the Defense Department within the next two to six

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FAHRALLOY HAS THE ANSWER!

If you are converting for the mobilization program consult Fahralloy for your burning tool needs. We may have the exact patterns for your needs. If the job requires SPECIAL application FAHRALLOY engineers will quickly and inexpensively design it for you. Either way you'll be getting the finest burning tools possible; tools that mean higher thermal stress protection with correct chromium and nickel analysis . . . practically no weight loss, breakage or warpage . . . minimum bearing area and proper suspension whatever the parts to be enameled. Send today for FAHRALLOY Catalog 48 or write for direct consultation with FAHRALLOY engineers.

THE FAHRALLOY COMPANY
150th & Lexington, Harvey, Ill.

FAHRALLOY
RESISTS HEAT AND CORROSION!

weeks. This listing tells who is going to procure what, where to write for specifications, blueprints, etc., for prime contracts.

Information on sub-contracts

For companies which are interested only in sub-contracts Blythe said that there is *a synopsis of awards* available which tells who got what contract. He pointed out that "in that synopsis of awards you may see somebody that possibly uses stampings or some of the products which you represent . . . Then you can contact that person, giving him a brochure with your facilities, your management, your know-how, and what you did in the last war, etc., and work up a relationship which may develop into a contract."

Information on prime contracts

"Now, if you are interested in a prime contract," said Blythe, "the first thing to do is look around locally. Go to your Chamber of Commerce. Go to your Department of Commerce which is represented in some 50 places throughout the United States (*see list of Dept. of Commerce offices on page 6, February 1951* finish) . . . Show them your facilities. Then they can tell you whether it is Ordnance of the Army, Ordnance of the Navy, or what particular branch of the Army, having about seven different technical services that it might come under, or what branch of the Navy, and you can contact those people. That is the only way that we are actually going to help ourselves."

Continuing, Blythe pointed out that "In the past two years there has been an Office of Small Business set up in the Department of Commerce; an Office of Small Business set up under the ECA, who buy the materials for Europe and the Far East; an Office of Small Business set up under General Services; an Office of Small Business set up in the two houses of Congress, and a select committee of Small Business in the House and the Senate. All of those people are sincere in trying to work to your benefit."

Blythe told his audience of stampers that anytime they have a problem that they think the Office of Small Business can help them on, they should drop a line to that office (*Office of Small Business, 3D, 760 Pentagon, Washington 25, D.C.*).

"If you get down to Washington," said the speaker, "I recommend that you go see the Central Military Procurement Information Office, and lay your problem out in front of them. . . . They know procurement. They know the places where this business can be obtained better than anybody else in the whole military end of the business, and they can help you . . . Lay your problem before them . . . Tell them what you can do and tell them what you are trying to get, and they will advise you who to go to see and help you get a contract or a sub-contract," concluded Blythe.

Peak PRODUCTION
. . . . can only be obtained with FINISHING EQUIPMENT DESIGNED FOR YOUR PRODUCT . . . . SUITED TO YOUR BUILDING . . . . AND GEARED TO YOUR PRODUCTION . . . .
Why be satisfied with "so-called" standard equipment when, for just a little more, you can buy the very best?
CONTACT BOX A-8 FOR NAME OF OUR NEAREST REPRESENTATIVE
Views of a complete system recently installed in the plant of a large mid-western electrical apparatus manufacturer . . . .
WASHERS • • SPRAY BOOTHS • • FLO-COTE • • OVENS
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New Supplies and Equipment

E-11. Special heat-resisting finish for heat exchangers

A high temperature finish that resists heat and corrosion is suitable for finishing heat exchangers for home heating units. Also suitable for the exhaust systems and other defense products requiring high heat and thermal shock resistance.

E-12. Heat treat quenching unit

Specially designed quenching-and-conveying equipment for the contin-

uous heat-treating of metal parts. Oil is recirculated and cooled. Design of metal belt allows quenched parts to drain as they move up the conveyor. Available in sizes to fit parts of varying size and weight.

E-13. New machine applies rust preventative coating

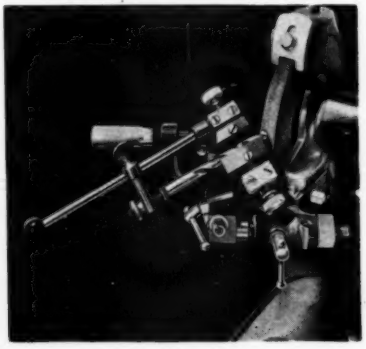
A new machine for applying rust preventative coatings is especially designed to apply government specification No. AXS-673 corrosion preventative compound. The machine sprays the compound on parts, and then dries the coating before discharging the parts. A wire mesh conveyor carries the parts through loading, oil spray, drain, infrared drying, cooling, and unloading.

More Information

For more information on new supplies, equipment and literature reviewed here, fill out the order form on page 65, or write to us on your company stationery.

E-14. For sharpening steel drills

A new drill grinding attachment for sharpening steel drills of any

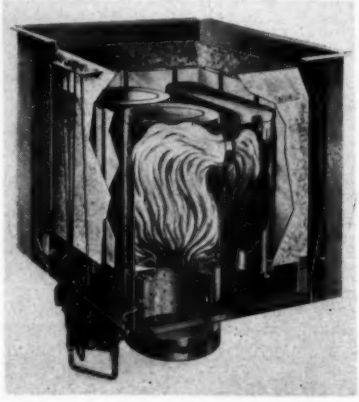


size from 1/8" to 5/8", using a standard tool grinder is designed for the inexperienced operator who could not otherwise expect to sharpen a drill accurately.

Micrometer adjustments are provided. Spline shafts are used to provide rigidity. All points can be adjusted for wear.

E-15. New silicone-base finish for high heat resistance

A new silicone-base heat-resistant finish is claimed to exhibit unusual



stability at temperatures as high as 1000° F. Suitable for brush, spray or dip on a chemically clean surface. The manufacturer reports production line proof for such products as industrial furnaces, heating units, incinerators; also recommended for surfacing engine boilers, aircraft parts, electrical equipment and high-temperature processing equipment.

Photo shows combustion chamber of a floor furnace where temperatures reach 870° F.

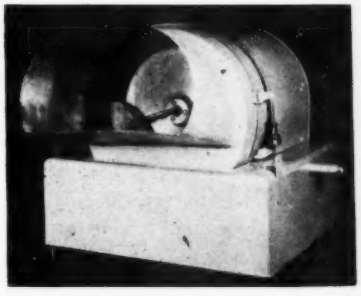
E-16. New inhibitor for non-aqueous liquids

Development of an inhibitor to protect shellac and other non-aqueous liquids from metal contamination has been announced. The new product is said to be especially valuable in view of National Production Authority restrictions on shellac containers.

The new inhibitor prevents iron pick-up by forming a thin coating of a complex iron phosphate on the inner wall of the container. The reaction prevents the metal from becoming soluble in the shellac.

E-17. Industrial humidifier

A new industrial humidifier is now in production. The unit requires no



ducts, no pumps, no compressed air, and no steam lines. Each unit is a complete system in itself and only requires a water feed line. No return water line is required. The vapor is emitted in a fine mist-like form.

E-18. Dual purpose metal cleaner

A new wipe-off metal cleaner is said to remove rust, grease and oil, and leave an iron phosphate coating as a bond for all types of paints. Apply with brush, wipe off with cloth.

E-19. Improved palletainers for fork truck handling

Made of heavy gauge welded wire mesh with steel pallet base for fork truck handling and stacking, these collapsible palletainers have been improved with new cast steel leg supports which are welded to bottom and reinforced steel base runners. This construction makes the base extra rigid and practically indestructible. As shown in photo, the design for the new leg support also provides a cast steel recess which acts as an interlock for stacking.

Another improvement is the new positive locking device shown in the inset picture. This heavy duty lock holds the sides of the palletainer securely in upright position regardless of load. It cannot be released accidentally. Palletainers are used in handling, storage and shipping loads up to 4000 pounds.

E-20. Heavy duty steel strap dispenser

An electric motorized dispenser of ¾" and 1¼" heavy duty steel strap

uncoils the strap along the floor so that when the desired length has been obtained the operator can cut it off with the manually operated shear. What was formerly a two-man operation becomes a one-man operation with the coil dispenser.

The dispenser is loaded by rolling coil of strap into the cradle and threading end of the strap through the dispenser. Positive chain drive is employed with 110V AC motor.

E-21. Knock-down materials handling box

A new knock-down materials handling box combines the stacking and

strength features of rigid boxes with the consolidation features of other collapsible boxes. Features permit the safe and rapid transportation and stacking of loaded or empty boxes in multiple numbers. When empty, the boxes can be disassembled so that 10 units can be knocked down and stored in the same cubic foot space required for only 4 assembled boxes.

NEW LITERATURE

501. Color booklet on metal strippers and cleaners

Free colored literature covers metal strippers, enamel strippers, blackening processes, and emulsion cleaners. Includes step-by-step instructions for use.

---

502. Fact folder on pickle room heat exchanger

This fact folder includes complete data and illustrations covering a new-type heat exchanger for heating pickling and plating solutions.

---

503. Magnetic separation booklet

A booklet on magnetic separation and equipment of both open and closed types for separating iron from heavy liquids will be mailed on request.

---

504. Milling equipment catalog

A complete catalog of ball mills and grinding equipment for use in porcelain enameling plants.

FINISH
360 N. Michigan Ave.
Chicago 1, Illinois

Please forward to me at once information on the new supplies and equipment and new industrial literature as enumerated below:

No._____ **No.**_____ **No.**_____ **No.**_____

No._____ **No.**_____ **No.**_____ **No.**_____

Name _____ **Title** _____

Company _____

Company Address _____

City _____ **Zone**____ **State** _____

finish SUGGESTION BOX

New phosphating cleaner uses three-stage washer

by Bert Doggett • PAINT SUPERINTENDENT, IRONRITE, INC.

PAINT failures on the popular Ironrite Ironer have been reduced to a minimum by the use of a new type phosphating cleaner, which cleans metal and deposits a tightly adherent phosphate coating at the same time. This coating not only retards rust, but provides an excellent bond for industrial finishes.

The cleaning and conditioning material we employ is used in a three-stage washer. After the metal is cleaned and coated, it is given a hot water rinse, and then finally given a chromic phosphoric rinse. The temperatures we use are between 170° and 180° F. Another advantage of the simplified process is that the chemicals we use are not critical and do not break down at these high temperatures.

These fabricated sheet metal "legs" are shown entering a three-stage washer for cleaning and phosphating treatment prior to painting.

5,000 painted units per day

At the present time, we are using approximately one-half the amount of the chemical used in our former, more complex rust-proofing process. Considering the fact that we are processing over 5,000 painted pieces per day, the saving in processing materials has been substantial.

Following recommendations of the supplier, we use the phosphating cleaner in concentrations of one to two ounces per gallon of water. The material is non-toxic, non-fuming, and requires no special care in handling.

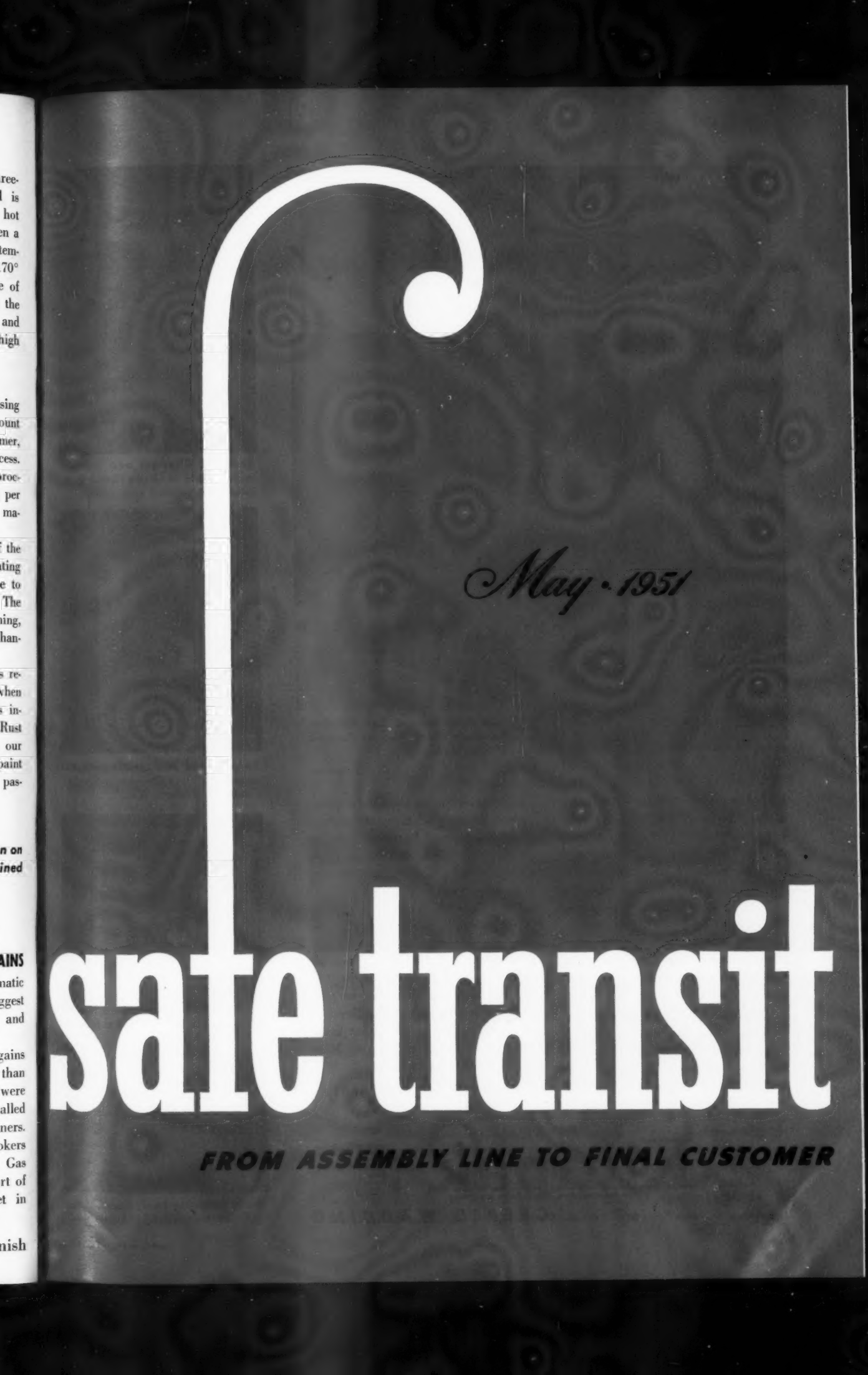
Normally, the washing process requires about one minute, but when surface rust is apparent, this is increased to four or five minutes. Rust spots may still be visible, but our experience in the reduction of paint failures indicates they have been passivated.

***Source for further information on this new cleaner may be obtained by writing* finish.**

AUTOMATIC HEATING MAKES STRONG GAINS

It was a big year for automatic heating in 1950—in fact, the biggest in history, says the Plumbing and Heating Industries Bureau.

Oil and gas chalked up new gains and together sold slightly less than 2,000,000 installations. There were 817,702 domestic oil burners installed in 1950, and 1,081,000 gas burners. In addition, a total of 19,546 stokers were shipped by manufacturers. Gas burner shipments were little short of double the previous record set in 1949.


May • 1951
safe transit
FROM ASSEMBLY LINE TO FINAL CUSTOMER

Prize-winning packages feature

Kimpak Float Packaging!*

First Prize Wooden Box Package. Burroughs Adding Machine Company, Detroit, Mich.

It's no strange coincidence that many of the winners in Philadelphia's 1950 Industrial Packaging Exposition used KIMPAK* creped wadding at one vital point or another. One of the reasons why this is true–the extreme versatility of KIMPAK–is demonstrated by four of the winners shown here. However, there are *several* reasons why so many, *many* companies who have switched to KIMPAK, turn in prize-winning packages each year.

KIMPAK is a pre-fabricated, grit-free material–soft, clean, easy to apply as wrapping paper. It comes in rolls or sheets, and can be "tailored" to meet your particular packaging requirements. Because it is not a waste material, KIMPAK saves you money in the shipping room–"saves" you customers who are ordinarily annoyed by the mess and inefficiency of loose-fill substitutes. Truly, KIMPAK creped wadding affords optimum protection to packaged products at lowest true cost.

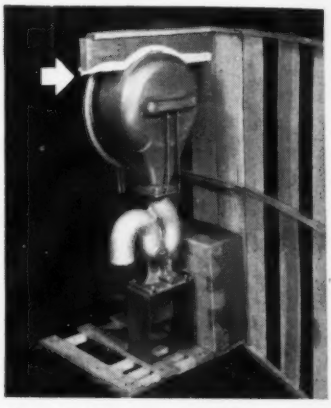
Try KIMPAK soon–for any of the Four Basic Methods of Interior Packaging–Bracing and Blocking, Flotation, Surface Protection, Absorbent Packaging. For further information, see your nearest KIMPAK distributor listed in classified telephone directories under "Packing Materials" or "Packing Materials–Shipping"; or write to:

KIMBERLY-CLARK CORPORATION
NEENAH, WISCONSIN

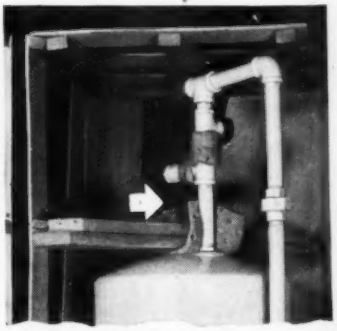
Kimpak
REG. U.S. PAT. OFF. & FOREIGN COUNTRIES
A PRODUCT OF Kimberly Clark RESEARCH
CREPED WADDING

*T. M. REG. U. S. PAT. OFF.

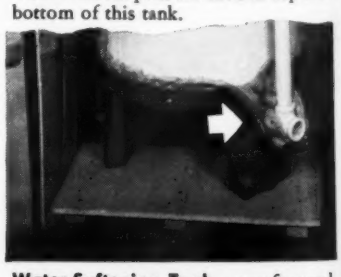
Shur Oil Changer and Flusher, manufactured by Grieve-Hendry Company, Chicago, Ill.



Surgical Bed Pan Sterilizer, manufactured by Ohio Chemical & Surgical Company, Madison, Wis.



Thick KIMPAK pads are used at top and bottom of this tank.



Water Softening Tank, manufactured by Culligan-Zeolite Co., Skokie, Ill.

safe transit

A monthly trade publication section devoted to improved packaging and shipping and materials handling practices in the home appliance and allied metal products field.

Plant experience information for all executives and plant men interested in the problem of packaging and shipping improvement and loss prevention.

Complete information on the National Safe Transit pre-shipment testing program for packaged finished products, and detailed progress reports of divisions and sub-committees of the National Safe Transit Committee.

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MATERIALS HANDLING EXPOSITION, APRIL 30 - MAY 4 80

FIRST WEST COAST LABORATORY CERTIFIED FOR SAFE TRANSIT 81

SEEGER, RANNEY, KRESKY, ENAMEL PRODUCTS CERTIFIED FOR SAFE TRANSIT 81

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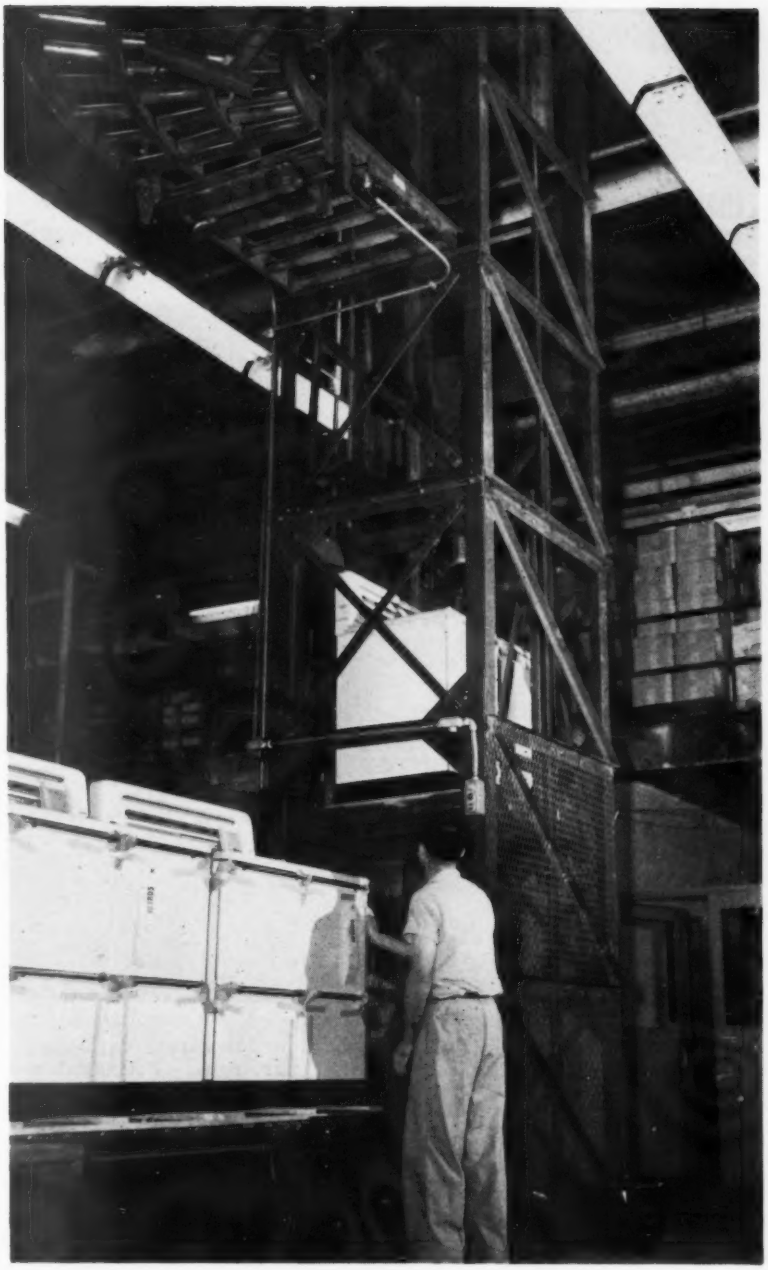
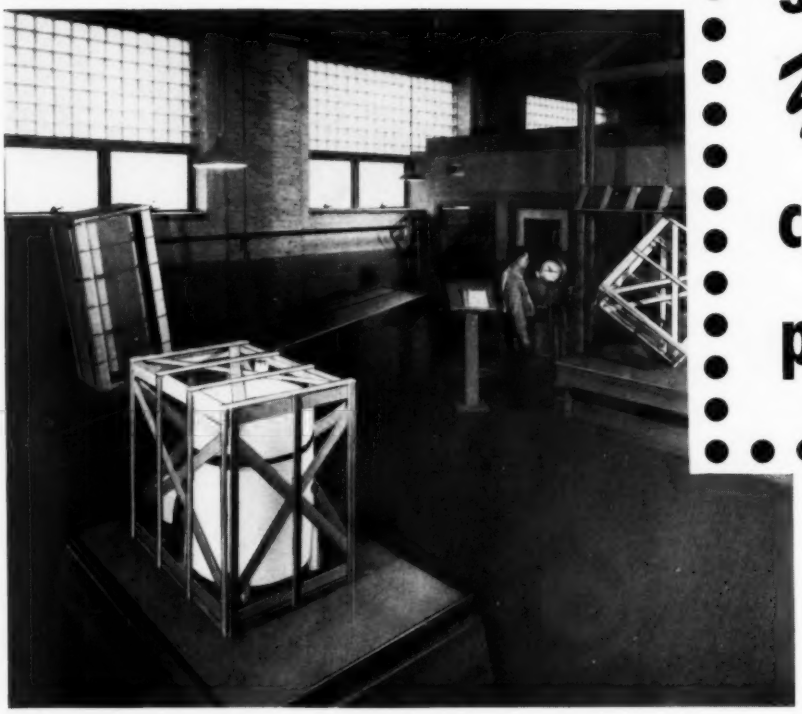


Materials handling from production line to overhead transportation or storage

This photo shows an effective method of handling ranges from the final assembly line to an overhead conveyor system. This type of elevator can also be used effectively as a means of transportation to overhead storage. In this instance, finished kitchen ranges leave the final assembly line in Hotpoint's $13 million range plant in Chicago to overhead roller conveyor which carry the ranges over indoor spur tracks to warehouse building where they are crated for shipment. Such materials handling features as these are necessary in a plant with a rated capacity for shipping 32 railroad cars daily.

A proving ground for *Your* crated product!

● Section of the Chicago Mill and Lumber Company Testing Laboratory. This Laboratory is certified by the National Safe Transit Committee.



SENDING your crated product through the Chicago Mill and Lumber Company Laboratory is like taking out an insurance policy for safe delivery.

Experienced engineers and crate designers use the latest in testing equipment to search for weaknesses that may result in transit damage to your valuable finished products.

Assurance of safe arrival will result from pre-shipment testing in our certified laboratory. Avail yourself of this service.

Chicago Mill has the most diversified line of boxes and crates in the country. The most adaptable and economical will always be recommended.

CHICAGO MILL AND LUMBER COMPANY

33 South Clark Street **Chicago 3, Illinois**

Plants at: Helena, Arkansas • Greenville, Mississippi • Rockmart, Georgia
Tallulah, Louisiana • South Fork, Colorado • Chicago, Illinois

How we reduced our shipping damage

reducing the hard-to-find damage in the low percentage brackets by pre-shipment testing, and then making indicated changes in product, packaging, and processing

by R. E. Heine • CHIEF INSPECTOR, NORGE DIVISION, BORG-WARNER CORP., EFFINGHAM, ILL.

finish About four years ago, our damage percentage on ranges was running over 8%. At that time no definite procedure was set up to determine where the damage was occurring and to what extent. We tended to pass off our damage as just "one of those things" due to rough transportation. Reports from the field were unreliable in that many of the reports were based on opinions instead of facts.

In order to find the reasons for our transportation damages, a reliable method had to be found to determine (1) what the damages actually were, (2) at what location they were occurring, and (3) at what frequency.

Railroad damage charts

We found the original solution to our problem by means of the Railroad Damage Charts *(see "Another Workable Program for Reducing Shipping Damage," December, 1949,* finish). Briefly, the Railroad Damage Chart was a large form showing the location of the ranges in the boxcar, expanded views of the types of ranges shipped, expanded views of the crates, and the location of the anchor and unit bands at loading. The charts were sent out with every carload of ranges. Upon receipt of the car, our distributors would forward the desired information back to the plant according to our instructions. With this information we were able to determine what we wanted to know. We immediately went to work on our crating, packaging, and boxcar loading. The results were about immediate as shown at "A" on the Porcelain Exterior Damage Chart *(on next page)*.

Pre-shipment testing begun

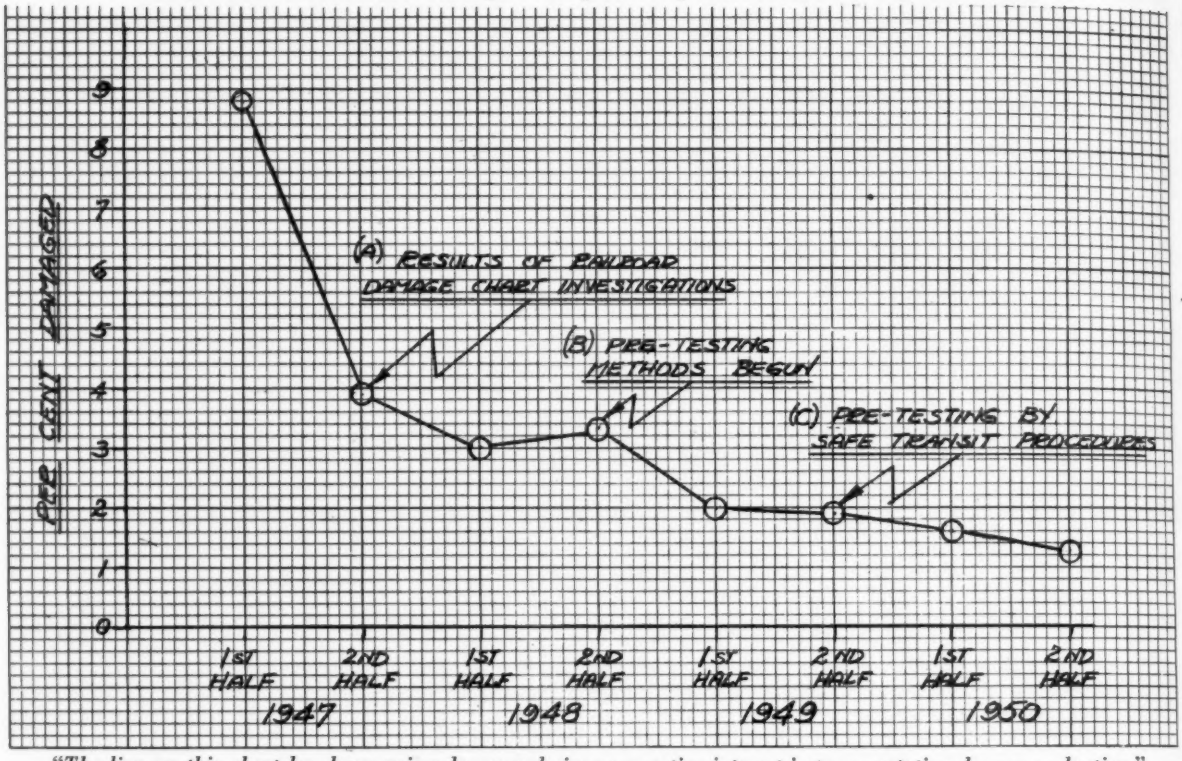
Although we had cut our damage in half in a period of a few months, we felt more could be gained if we knew what our damages would possibly be *before* we shipped our product out, rather than waiting for damage reports *after* the damage had happened. Coincidentally, we noticed with interest the pre-shipment testing procedures as suggested by the National Safe Transit Committee. We felt these procedures would be a possible solution to our problem so we immediately purchased a shake tester *(vibration machine)* and constructed a *(Conbur)* impact tester according to specifications. We borrowed an impact register from a local railroad. We were then ready for business. Within the first few hours, things showed up after these tests that were so obvious that they practically told us their solution. This particular period is indicated by point "B" on the chart.

Certified by National Safe Transit

The results of transportation damage reduction due to changes in design, packaging and processing were so impressive that we decided to follow Safe Transit procedures to the letter. We purchased a number of

Cut-away of the packing box demonstrates how grates and burner bowls are packed in partitions. Removable oven floor is held in place by the packing box, which in turn is held in place by the rack, broiler pan, and literature packing assembly. This packing assembly slides tightly under the oven rack studs thus making the whole oven pack secure for shipment. Cut-away of wrapping on the right front shows how racks are nested for this assembly.

Range Exterior Porcelain Damage as Reported by Distributors on Railroad Charts



"The line on this chart has been going downward since our active interest in transportation damage reduction."

shock recorders and a drop tester to make our pre-shipment testing equipment complete. Right after this ("C" on the chart), we were certified by the National Safe Transit Committee, and have been cooperating in their program ever since. As you will note from the chart, we have reduced our damage percentage well over half since the start of the pre-shipment testing procedures.

Improvements listed

Both the Railroad Damage Charts and the Safe Transit pre-shipment tests told us where our weaknesses were. The big job was doing something about it. Many of the improvements listed were brought about from the results of the tests, while others were suggested by plant personnel in the regular duties of continually making improvements in the product. However, all affect the ability of the product to withstand rough handling and are therefore included.

Improvements in product design

(a) The gage on the main front frame was increased, and the oven and broiler radii were reinforced to withstand a bending action on the frame.

(b) The diameter of the oven support rod was increased and the number of leg supports on the oven burner was increased to three.

(c) The location of the end panel attachment bolt holes was changed to give a more even distribution of the panel weight after assembly.

(d) An asbestos washer was added between the oven lining and oven lining bolt, thus preventing metal to porcelain contact.

(e) A separate flexible insulation retainer was welded to the top of the front frame. This prevents concentration of strain in the two upper corners, a former source of breakage.

(f) Our drawer bodies were redesigned to give more door panel adjustment and thus decrease the possibility of strain at assembly.

(g) The hinges, hinge fulcrum and front frame of the broiler assembly were all redesigned so as to give more adjustment at assembly, more clearance at the hinge area, and yet a better seal of the broiler door liner to the main front frame. This practically eliminated all broiler damage.

(h) Embosses were eliminated in the broiler bodies at the broiler roller frame attachment areas, eliminating another area of strain.

(i) Reinforcements were added to the outside top and bottom return flange corner areas of compartment doors, another previous source of breakage.

Improvements in packaging

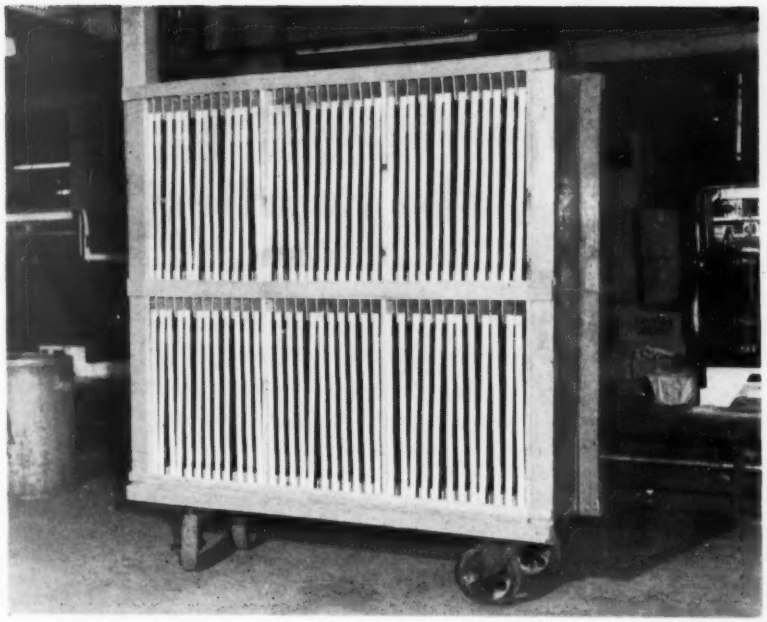
(a) In order to reduce the weight of the package in the oven, the top burner assemblies are now secured in their regular location in the maintop.

(b) Type of tape, location, and amount of packing material has been redistributed so as to give greater protection for an equal amount of material used.

(c) An additional wooden wedge was added between the range base and crate base to prevent flexing of the frame on a certain model.

(d) Our crating is much stronger than before. The thickness of the wood was increased. Diagonal braces were relocated to prevent any shearing action in transit. The crate as-

Right: Factory in-transit damage has been reduced by the use of special rubber wheeled trucks which have separate protected compartments for individual end panels.



sembly was shortened so that a horizontal board on each crate end touches the range at the end panel-maintop location. This of course is protected with a buffer. This seemingly makes the crate and the range a solid unit, thus preventing any shifting or weaving of the range while in transit.

(e) Packaging of items being packed into the oven for transportation was improved so as to protect both the packaged item and the oven from damage in shipment.

(f) In securing the ranges in the boxcars, we changed to heavier upright supports and switched to unit banding, using the floating load method exclusively.

Improvements in processing

(a) We now use titanium white enamel exclusively.

(b) A thorough program of correct porcelain enamel handling has been put into effect throughout the plant.

(c) Techniques have been developed to reduce the thickness of application of both white and ground coats in porcelain enamel.

(d) Former unsightly wipes on the back corners of the maintops and end panels were found unnecessary and therefore eliminated.

(e) Special trucks, reinforced cartons and protected packing areas were built to further protect the porcelain enameled range parts being transferred within the plant.

to Page 79 →

Left below: Cardboard cut-out holds the burners and the maintop insert in place. The taped-on wooden slat holds the cardboard cut-out in place. The cut-away section of the cardboard illustrates that the maintop insert holds the flash tubes in place, aided by the white piece of packing. Right below: Note the heavy upright supports and the bands that secure each floating load unit.

Packing for export and its effect on proper handling

how the transportation industry views export packing and the effects of packing on proper handling while enroute and at port of export

by John A. McCoy • VICE PRESIDENT, THE MOTOR HAULAGE COMPANY, INC., BROOKLYN, N. Y.

IT IS the trucking industry's responsibility to report what our medium of transport sees when we handle export freight and the apparent causes of any irregularities, how the same affect our operations and our costs, and what is the most direct and practicable method of eliminating or at least minimizing the difficulties.

If it develops that certain conditions result from failures on the part of the shipper or carrier, I am sure there is available a clinic of some kind that will assist in curing the malady. I say "malady" because much of our claim ailments are continuing day after day, and the effect of this repetition is appalling. The *monotony of loss and damage* resulting from the daily indifferences, carelessness, lack of planning, deficiency of ideas, pilferage, etc., might easily cause persons in the transportation field to take for granted the enormous losses that are observed every day.

The principal causes of loss are: theft and pilferage, breakage, leakage, contact with other shipments, oil damage, hook damage, contamination, slackage, short weight, fresh water damage, sweat, improper marking. Some of these losses result from improper packing, negligence, undue exposure, deliberate theft, etc.

Each segment of the transportation industry has a set of minimum standards that generally reflect the opinions of experts as to what accommodations and protection should be accorded freight to insure safe movement to the point of destination on its own line.

To illustrate: the motor freight classification gives the conditions that govern the acceptance of freight for movement by motor carriers within continental United States, and if these conditions are complied with, the freight should arrive, with reasonable handling, at its destination in good condition.

But these rules and suggestions were never intended to apply to movements to distant parts of the globe requiring additional handling enroute and long periods of delay incident to transshipment and sometimes being exposed to the elements because of lack of shelter. The condition of freight sometimes suggests to us that the packaging is suffering from fatigue. It may have been a fairly good package for a short trip subject to a few handlings, but definitely not adequate for the trip undertaken.

Freight may be enroute a few hours or several months

Freight may be enroute from a few hours to several weeks or months. It is possible for one or more carriers to participate in the transportation of freight from point of receipt to seaboard. If the town or city of receipt is the place where it is delivered to a water carrier, the motor carrier may have the goods in its possession only a few hours; if it originates at a distant point, the initial carrier may or may not have through service; if it is a small shipment, it may be handled many times enroute; if the property, for inherent reasons, must receive special handling or if it is unique as to size and structure or shape, the difficulties of stowing are enlarged and intensified.

When goods arrive at seaboard from interior points, it may be possible to make direct delivery to water carrier only because the timing of movement is perfect or nearly so. This, of course, is the object of the license and permit method — to minimize the holding period and the handling of goods unnecessarily at the point of export. This ideal system can be realized, to some extent, on large lots, but on small shipments the property may be subject to handling and delays at certain ports. The goods may be retained in carriers' depots waiting for clearance papers. Sometimes ships may be in port; sometimes not. Perhaps the water carrier will receive the property on its pier where it is held until ready to load into the ship. If property is undelivered by motor carrier before the free time expires, very often it is sent to public warehouses where it is handled a minimum of four times and each and every handling is to some small degree taxing the strength of the package or exposing it to loss or damage.

The motor carrier industry is constantly striving to provide equipment and gear to handle freight efficiently and is using trucks of special and stock design. Practically all trucks are equipped with pneumatic tires, air brakes and other safety devices.

To accommodate the demands of the shipping public and provide economical transportation, property is moved in conventional trucks, tractors, semi-trailers and sometimes in full trailers.

Vehicles are equipped with winches, cranes, elevating tail gates, and side

The WATKINS CONTAINER

Quickly Assembled STRONGER LIGHTER

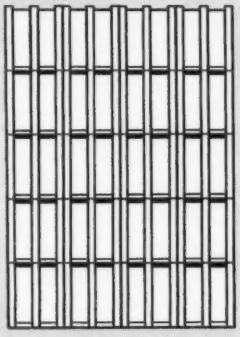
Light in weight, the Watkins Container is quickly and easily assembled to completely enclose your finished product, saving labor . . . saving time . . . saving expense. The container arrives at your plant 75% assembled.

Scientific design affords strength out of proportion to container weight: strength to carry your product safely . . . strength for stacking to any practical height . . . strength to resist weaving and shock without distortion.

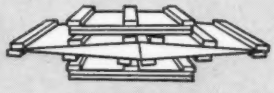
You get *complete* product protection: protection from outside dirt and dust . . . protection inside for fine product finishes — smooth interior with no staples or rough surfaces to damage the product.

Add to these advantages the "Traveling Billboard" feature (advertising can be printed in two colors on four sides) and you will see why more and more appliances and other valuable finished products are being shipped the "Watkins way".

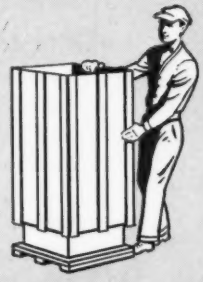
THERE IS A WATKINS CONTAINER MADE NEAR YOU



STACKING Vertical wood cleats provide exceptional supporting strength to carry heavy loads. Typical crate supports 4 tons.



STORING Containers are delivered flat (only 3 sections) and closely nested to conserve storage space.



QUICK Assembly line packing is speeded up. Easy to handle. Complete protection for your product.

STRONG All wood cleats securely glued to tube-mat. Laboratory tests prove glued cleats resist weave and distortion better.

These companies build WATKINS containers

CORNELL WOOD PRODUCTS CO., Hummel & Downing Division, 1514 E. Thomas Ave, Milwaukee, Wis.
COZIER CONTAINER CORP. . . . . 446 East 131st Street, Cleveland, Ohio
CRATE-RITE MFG. CORP., Division of Pacific Ports Ind. Inc., 10901 Russet Street, Oakland, California
DURA-CRATES, INC. . . . . 940 East Michigan Street, Indianapolis, Indiana
GENERAL BOX CO., 500 N. Dearborn St., Chicago, Illinois, and 16th and Maple Sts., Louisville, Kentucky
HEMB & MARTIN MFG. CO. . . . . Watseka, Illinois
ILLINOIS BOX & CRATE CO. . . . . 811 Center Street, Plainfield, Illinois
KIECKHEFER BOX & LUMBER CO. . . . . 1715 West Canal Street, Milwaukee, Wisconsin
LANE CONTAINER CORP. . . . . 10212 Denton Road, Dallas, Texas
LEWISBURG CONTAINER CO. . . . . 243 Singer Street, Lewisburg, Ohio
LOVE MFG., INC. . . . . 608 South Commerce Street, Wichita, Kansas

—an inquiry to any of these companies will get prompt attention—

The · WATKINS CONTAINER · Manufacturers

doors to facilitate unloading and to keep down the loss factor. Yet these precautions are not sufficient in themselves to overcome the deficiencies of poor packaging.

The handlings at port of export is a phase of the through movement that all carriers are concerned with regardless of whether that carrier is for hire (common or contract) or private. Straight truckloads generally travel directly from point of shipment to steamer without transfer. If properly loaded and stowed, they may suffer no strain or stress or be subject to anything more than ordinary enroute travel but they must undergo one of several methods of discharge from the truck to ship. As the motor carrier is vitally concerned with the condition of the freight and the receipt it receives from the waterline, it is greatly concerned with what the freight must undergo — not because of deliberate negligence of anyone but because of conditions at the points of transfer.

Port facilities

My conception of port facilities is that the worst in this country is with some exceptions as good or better than the best in other countries. We cannot change the conditions at the ports, but we can try to adapt our packing practices to the places and conditions as we find them even though they are not superb.

For example, let us look without condemnation at the conditions at the Port of New York where by far the greatest amount of foreign traffic is handled. The sailing of ships from this port exceed by several times the combined sailings of the other ports. We are concerning ourselves with freight that is handled by motor carriers, not with bulk cargos or cargos that may be transferred directly from point of shipment to steamer by other means.

If we pick up freight in a local area, such as at a manufacturing plant, the presumption is that the package is new and clean, fresh and not dried out; and according to the nature of the same, it will be handled on one or more of numerous vehicles ranging in size from one-half ton to forty tons carrying ability. These vehicles may be platform or stake, van rack, full panel without roof, insulated, refrigerated, etc. They may be the conventional type truck or tractor with full trailer or semi-trailer. They may be standard in floor height, 40 to 54 inches according to tire size, or they may be underslung as low as 18 inches to permit the handling of large and heavy pieces.

If the shipper or manufacturer has adequate facilities for loading, the vehicles can be properly loaded with dispatch providing the nature of the commodity will permit; if safe transportation for even the shortest distance demands exceptional precautions, the time will vary; the vehicle may be loaded manually or by machinery.

If the carrier receives a straight load or full load for one pier or one port, the vehicle can proceed directly to that point; if the vehicle is loaded with freight for many ports or if the load consists of freight intended for domestic transportation as well as export, then the vehicle must proceed to a point of transfer where its first rehandling takes place. It generally moves through a house or transfer shed and the transfer is accomplished by use of hand trucks, hi-los, cranes or other mechanical methods from dollies to the latest in electrical moving belts or conveyors, etc. It is stacked again in new vehicles and usually it meets new types of freight —boxes and cartons become associated with barrels and drums, kits and carboys, cylinders and unpacked commodities.

Here the first real test of skill is shown by the carrier. Stowing must recognize safety to package and contents, safety to the person handling the same, safety to the vehicle, safety to the public, etc. Packages of all types and descriptions must be blended into a compact mass that will ride safely to the pier without injury to itself, or anything else, or anyone. Some styles of packages lend themselves to safety, others defy it.

When freight is tendered to the steamship company after the routine of clearance through the receiving clerk's office and the Customs has been attended to and the steamship company assigns a checker to receive the freight, it is still the custom of some piers to require the truckman to deposit the freight at different points on the pier according to the port for which the freight is destined. This is called "porting."

The motor carrier is usually required to send sufficient help to the pier (or engage it) to assist the chauffeur to remove the freight from the vehicle and stack it at points where it will be convenient to the steamship for final loading of the ship according to a diagram or plan previously set up.

If the vessel is ready to receive the freight, direct transfer may be made to the ship. In this case there may be some assistance provided so that goods will be placed directly in the ship's net or on the ship's pallet, or the character of the freight may require slings placed around the freight for direct handling into the hold of the vessel.

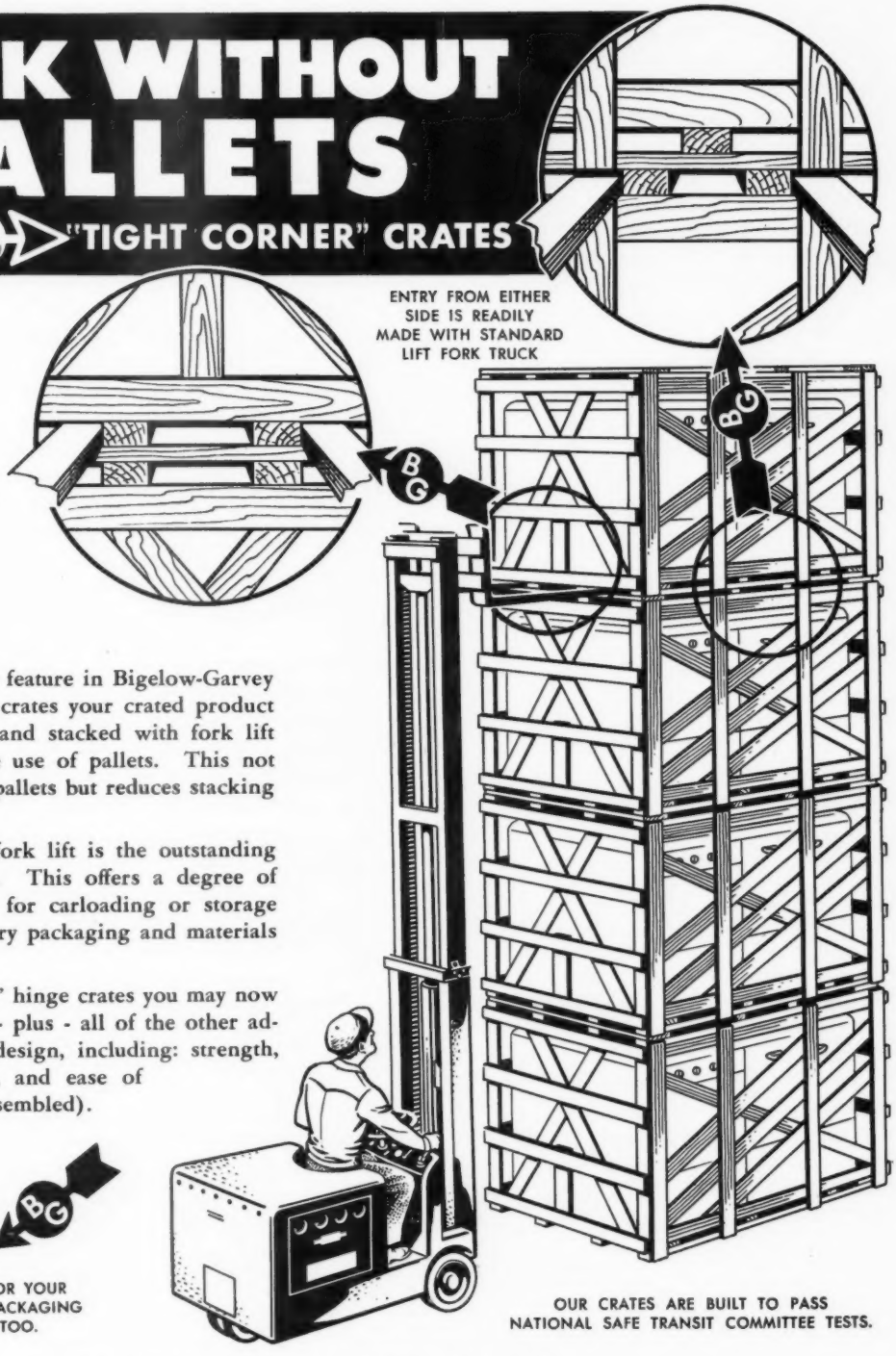
If the ship is not ready to receive, the motor carrier is usually required to place the freight in stacks about six feet high, type of freight permitting, at a point within truck length of the truck itself. Sometimes steamship lines require motor carriers as a condition of acceptance to load freight on the ship's pallets. This is usually done at the tail of vehicle or through the rear door or through side doors if so equipped. Sometimes heavy articles must be deposited on the dock floor by use of skids and winches.

If tiering is required, the motor carrier may accomplish this by unloading the freight to the floor and stacking the same through the use of manual labor. Or if the commodities handled are in barrels or other packages uniform in size that will stack well and sustain men walking on the same, the first tier already formed is used as a platform and subsequent tiers are built up by handling freight directly from the floor of the truck. Dunnage for use between tiers is supplied by the steamship company.

In all too few instances freight is unloaded directly from a motor

STACK WITHOUT PALLETS

WITH B-G "TIGHT CORNER" CRATES


ENTRY FROM EITHER SIDE IS READILY MADE WITH STANDARD LIFT FORK TRUCK
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Through a new design feature in Bigelow-Garvey "Tight Corner" hinge crates your crated product may now be handled and stacked with fork lift trucks WITHOUT the use of pallets. This not only saves the cost of pallets but reduces stacking space requirements.

Four way entry with fork lift is the outstanding feature of this design. This offers a degree of flexibility in handling for carloading or storage that will appeal to every packaging and materials handling engineer.

In B-G "Tight Corner" hinge crates you may now have this new feature - plus - all of the other advantages of the B-G design, including: strength, rigidity, light weight, and ease of assembly (65% pre-assembled).

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CHECK WITH US FOR YOUR DEFENSE PRODUCT PACKAGING REQUIREMENTS TOO.

OUR CRATES ARE BUILT TO PASS NATIONAL SAFE TRANSIT COMMITTEE TESTS.

Write us regarding your shipping problems

BIGELOW-GARVEY LUMBER COMPANY

General Office and Laboratory

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vehicle to a floor-high platform. In New York very few steamship companies utilize bulkheads for unloading, and, as a substitute, truck unloading operations are conducted on the public street in front of the dock. This area in the vernacular of the trade is known as the "farm." Sometimes the ship's hi-los place a stack of pallets at the tail or side of trucks and the motor carrier loads the same for the steamship company and as the top pallet is removed by the hi-lo, another one is substituted so that the same loading level is maintained. When freight is subjected to this type of handling, the containers must be rugged; they must be able to withstand punishment. They must be selected, packed, sealed and/or strapped in a manner that will allow them to undergo this handling without breaking or becoming damaged.

These comments are intended to be descriptive of conditions resulting very largely from antiquated piers and receiving facilities.

Poorly packed freight adds to handling costs

Poorly packed freight required more handling and increases costs. Poorly packed freight exposes motor carriers to claims for loss and damage and imposes upon them the requirement of extraordinary handling far and beyond that which is usually necessary when well packed freight is handled. It reduces the efficiency of the operations because it means more labor and sometimes more vehicles. To illustrate, a consignment of poorly packed freight may require the use of two or more vehicles instead of one vehicle as poorly packed goods do not stow and ride very well. Vehicles are delayed in loading and discharging and more manpower and gear are necessary.

In many instances, special trips are necessary to handle poorly packed commodities and carriers apply "exclusive use" rates. The practice is wasteful because full utility is not derived from the equipment. A mixture of poorly packed freight with other freight may result in contamination or damage or destruction to some of the freight because of the inability of the poor container or package to sustain other freight that normally would be loaded upon it. Generally, the loss sustained on a package that does not arrive at destination in good condition is more than what was thought would be the saving in the first instance.

"poorly packed is not packed at all"

There is no place in our economy for a poorly packed shipment because anything poorly packed is not packed at all. Such a shipment is simply so much merchandise—half-dressed so to speak—certainly unprepared to face the rigors of transportation necessary to accomplish final delivery at faraway places. *Anything worth shipping is worth packing well.* In determining what is best in materials and methods, there is no rule or yardstick that applies universally. Consequently, the shipper must try to visualize the conditions from point of origin to point of use or consumption. Anything less is compromising and involves great risk, and, as we see it, the shipper is failing in his responsibility if he shifts the determination of this vital decision to the initial carrier.

One of the greatest indictments against a poorly packed shipment is the fact that many receiving clerks, attempting to protect the interest of their employers, go to extremes in describing defective containers and assume that any one of the following notations will absolve his company from responsibility for any damage that may exist at the time freight is received by him, or in fact for any damage that may develop during the course of subsequent handling and transportation:

Broken band	Broken cleats
Broken strap seals	Broken seals
Recoopered	Leaking cases
Split board	Stained
Broken board	Hook holes
Crushed board	Old case
Loose board	Refused case
Light case	Nail holes
Contents rattling	Knot holes
Wrapper torn	Pry marks

Many of these exceptions represent the true condition of second hand containers but they are not positive evidence that contents are damaged or short. They seem to slander by innuendo, and certainly are considered by some as an invitation to file a claim.

Constructive suggestions on exporting of packaged products

Now that we have described export freight and conditions under which it is handled at one port, it seems that we should close this article with some constructive suggestions:

1. A representative of the shipper should acquaint himself with conditions of the Port through which his export freight passes and the facilities and equipment and the general ability of all carriers engaged between port of origin and destination to properly handle the freight.

2. The shipper should also procure information describing the conditions at the different ports of entry of the various countries throughout the world (such as the bulletin issued by the Insurance Company of North America), and then having complete knowledge of the nature and characteristics of his own freight, he should endeavor to select the best stock container available; if that is not sufficient to guarantee safe arrival at destination, he should prescribe certain specifications that will bring about the desired result.

3. Odd sizes and shapes should be tailored; over-sized cases that will shift in transit should not be used. As part of the planning for shipment, include in the study of the commodity the strength of inner packages, separators, partitions, nesting, cushioning materials, etc., and avoid overloading of the packages.

4. Make the primary object the safe arrival of the goods at final destination rather than the fitness of the package to qualify for acceptance at point of shipment.

5. Minimize the urge to pilfer. Do not divulge commodity if same is susceptible to pilferage.

6. Ship in packages of sufficient size to discourage throwing and tossing about.

7. Give thought to the use where

practicable of strapped skids and strapped pallets, vans, and steel containers.

8. Always confer with your motor carrier before designing containers to ascertain if the size and weight and general characteristics of the package will permit good stowage and safe carriage.

Good packing is best insurance

There is nothing static in our economy. Requirements change from day to day. Truckmen are trying to deliver products in the same condition in which they are originally shipped. No one makes money on claims and in nearly every case everyone loses. Even though insurance companies pay claims for loss and damage, it is our opinion that good packing is the best form of insurance. If we ignore this axiomatic principle after spending huge sums of money in time, materials and energy to manufacture a product and deliberately expose that article to loss or depreciation by failing to properly pack it, then we have defeated the purpose for which we are engaged in business.

Adapted for *finish* from a section of the "Short Course on Packaging and Materials Handling" conducted jointly by the Society of Industrial Packaging and Materials Handling Engineers and Temple University's Community College during the 5th annual Industrial Packaging and Materials Handling Exposition.

How we reduced our shipping damage

→ *from Page 73*

(f) Maintops that have too many coats of porcelain enamel on them are rejected for complete de-enameling and returned for reprocessing.

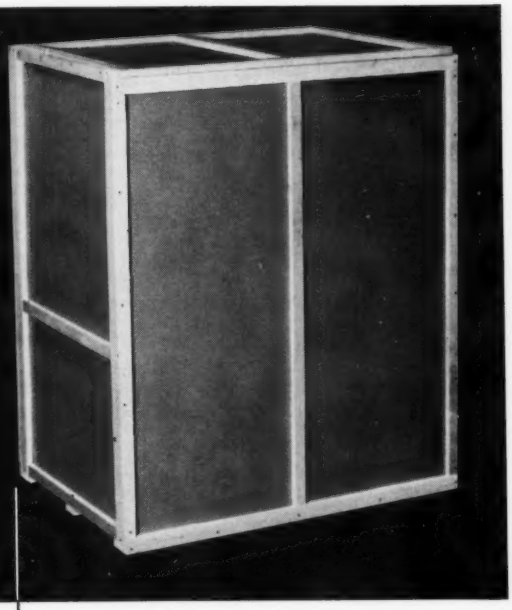
Railroads cooperate

Five shock recorders are now in our possession and are continually kept in use on the roads. At present we are sending the completed shock recorder tapes to two major railroad freight division offices where executives of the roads look over the results. If any rough handling is indicated, the railroads will contact their personnel concerned so that corrective measures can be taken. The railroads have been very cooperative and have reduced the amount of rough handling of our cars on their roads.

Value of the tests

As one can well imagine, Safe Transit has paid for itself many times over in reduced damage costs, dealer and distributor good will, and peace of mind on the part of plant management. When any new development passes our Safe Transit pre-shipment tests, we are certain it will stand up during transportation. We would not think of sending out anything new or different that may be affected by transportation without first subjecting the packaged product to the test procedures. The line on the chart has been going downward since our active interest in transportation damage reduction, and we intend to keep it going in that direction.

Cleated Fibre Shipping Cases



FOR Commercial Shipments

FOR Government Shipments

are safe, dirt-proof, strong — light in weight — comply fully with railroad and government requirements — present a clean, attractive exterior that lends itself well to advertising your product.

Cornell Cleated Fibre Cases are made at our Hummel & Downing Division at Milwaukee in many styles and sizes. We invite your inquiries for Cleated Corrugated or Cleated Solid Fibre Cases.

They comply with Government Specifications Jan-P-103 and NN-B-591.

Cornell WOOD PRODUCTS COMPANY

HUMMEL & DOWNING DIVISION, MILWAUKEE 1, WIS.

SPECIALTY PAPERBOARDS, FOLDING CARTONS, CLEATED, SOLID FIBRE, AND CORRUGATED SHIPPING CONTAINERS

Safe Transit—a valuable adjunct to the defense effort

by John Oliver • SECRETARIAL DIVISION, NATIONAL SAFE TRANSIT COMMITTEE, WASHINGTON, D. C.

IN THE present period of growing materials shortages, the National Safe Transit Program will make a vital contribution to the mobilization effort. By helping to reduce materials losses due to in-transit damage, Safe Transit will substantially help to ease the pinch on critical metals required in armament production. Under this cooperative program, materials are used efficiently since only a small amount is rendered useless as a result of products being damaged en route.

The amount of critical materials that will be available for civilian production of consumer goods will undoubtedly vary with the defense requirements. Thus, every piece of hard-to-get steel, aluminum, copper or other material used in major appliances and allied metal products, becomes doubly precious in the light of the increasing military demand. For companies making civilian goods, it behooves the manufacturer to get maximum value from his allocation of these materials.

Damage to critical metals reduced

By following the Safe Transit preshipment test procedures, manufacturers are able to determine in advance the shipability of their *packaged products*. By means of this scientific program, damage encountered in shipment can be greatly reduced. Thus, vital and scarce materials are used in products that will arrive undamaged and in workable condition rather than in products likely to be damaged or destroyed.

Scarce shipping space conserved

In a period of emergency such as we face, transportation facilities will be strained to the utmost. By using the Safe Transit Program, the maker of major appliances and allied metal products can be assured that a minimum amount of transportation space will be used to deliver a maximum number of products to the consumer in first-class condition. Freight cars and trucks will not be tied up unnecessarily since repair or replacement parts shipments will be kept to a minimum.

Manpower utilized more efficiently

Since damage to packaged products in shipment will be reduced, the time and effort devoted to filing damage claims, following up on the claims, and actual litigation will be sharply reduced, saving valuable manpower at this time when it is at a premium is especially significant. Along these same lines, manpower normally confined to repair parts handling by both manufacturer and distributors and dealers can be trimmed.

Dollars and cents savings

All the factors outlined point to one obvious benefit—namely, savings in dollars and cents. Full utilization of scarce material, improved use of shipping space, less manpower tied up in non-productive work — all can mean a worthwhile difference in the profit and loss statement. By following the Safe Transit Program now for appliances or allied metal products, benefits will accrue immediately to any manufacturer of these products.

SCHWARZ HEADS L.A.B. DIVISION

Announcement comes from B. A. Wittkuhns, president, L.A.B. Corporation, Summit, New Jersey, manufacturers of vibration machines and other testing equipment, that William F. Schwarz has been appointed manager of the company's Package Testing Machines Division. Schwarz replaces H. Geo. D. Nutting, who recently retired from active participation in this business.

SIGNODE CHATTANOOGA OFFICE

To serve the industrial expansion of the South, Signode Steel Strapping Company, Chicago, has opened a permanent Chattanooga office, headed by Joseph T. Holleman. This office will service an area including parts of Alabama, Georgia, Kentucky, and Tennessee.

During World War II, he attended the U.S. Naval Academy at Annapolis, where he received extensive engineering training. He recently completed an intensive training program sponsored by the Signode Company.

MATERIALS HANDLING EXPOSITION, APRIL 30-MAY 4

Thousands of new models of handling machines of more than 200 companies will be on display during the 4th National Materials Handling Exposition, held at the International Amphitheatre, Chicago, April 30 through May 4, under the sponsorship of the Material Handling Institute.

At the concurrent Conference on Materials Handling, sponsored by the American Material Handling Society, 58 top experts will address various sessions on *"Factors of Materials Handling"*, *"Bulk Handling and Storage Methods"*, *"Unit Loading and Packaging Methods"*, *"How to Make Survey Analyses and Studies"*, *"Process and Production Handling Methods"* concurrent with *"Distribution Warehousing Methods"*, *"Materials Handling Cost Improvement"*, *"You Can Sell Your Program—and Must"*, and *"Receiving and Shipping Methods"* concurrent with *"Yard Handling Methods."*

Rear Admiral M. L. Ring, S.C., USN, director of supply management, Munitions Board, Washington, D.C., is scheduled to address the Society's luncheon, May 2, on *"The Military Importance of Materials Handling."*

SET DATE OF 1951 PACKAGING, MATERIALS HANDLING SHOW

The Society of Industrial Packaging & Materials Handling Engineers has announced that its 6th annual Industrial Packaging and Materials

Handling Exposition will be held at the Public Auditorium. Cleveland, Ohio, October 1 through 4.

AGA WEST COAST LABORATORY CERTIFIED FOR SAFE TRANSIT

The National Safe Transit Committee has announced that the first laboratory on the West Coast to be certified under the NST program is the *American Gas Association Laboratories*, Pacific Coast Branch, Los Angeles, California. This brings to 17 the total number of certified laboratories.

SEEGER, RANNEY, KRESKY, AND ENAMEL PRODUCTS ARE CERTIFIED FOR SAFE TRANSIT

The latest manufacturers to be certified by the National Safe Transit Committee include:

Seeger Refrigerator Company, St. Paul, Minnesota; *Ranney Refrigerator Company*, Greenville, Michigan; *The Enamel Products Company*, Cleveland, Ohio; and *Kresky Manufacturing Company, Inc.*, Petaluma, California.

This brings to 77 the total number of manufacturers of home appliances and other metal products to be certified under the National Safe Transit Program.

WIREBOUND TRAINING PROGRAM GRADUATES 82 ENGINEERS

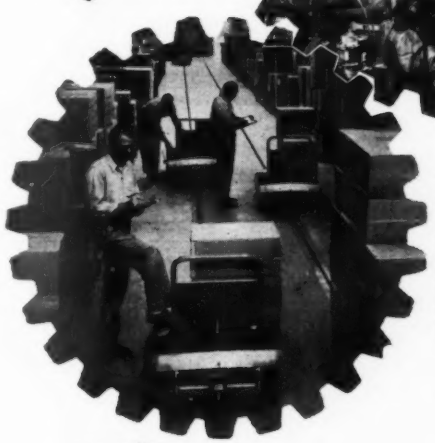
The wirebound shipping container industry's corps of "Wirebound Engineers" has been increased to over 350 by the graduation of 82 registrants in the third class of the Wirebound Institute. The graduation exercises were conducted at Chicago, Cincinnati, New York, Jacksonville, Florida, New Orleans, and Pasadena, California.

The graduates received their certificates as "Wirebound Engineers" after completing a two-year training course in designing, quality control, and laboratory testing. The course includes 25 difficult lessons and several regional clinics.

WEBB ENGINEERING PLUS MODERN CONVEYOR EQUIPMENT SYSTEMS MEET ANY MATERIALS HANDLING REQUIREMENT

POWER and FREE Conveyors provide essential *flexibility* to meet specific production problems. The *free* lines, integrated with the *power* lines, allow for any timing schedule.

TOWVEYOR Systems reach all plant or warehouse areas... multiply tonnage moved, expedite handling orders . . . reduce costs to a fraction. Trucks may be disengaged at any point by raising pin.



TROLLEY CONVEYOR SYSTEMS combine highest efficiency with low cost . . . constitute the greatest "assist" to modern mass production. Operating in hundreds of manufacturing plants, they handle all types of materials from light parts to massive loads.

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No. 46 TROLLEY CONVEYORS
No. 51 FLOOR TYPE CONVEYORS

VISIT OUR BOOTH #219
INTERNATIONAL AMPHITHEATER
CHICAGO, APRIL 30-MAY 4

JERVIS B. WEBB COMPANY
MANUFACTURERS OF OVERHEAD AND FLOOR TYPE CONVEYORS

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"I saw your ad in finish"

EEI → *from Page 40*

Infra-red cooking!

Developments in the manufacture of glass products have resulted in lamp bulbs which will not only withstand excessively high temperatures but extreme thermal shock as well, according to Richard G. Slauer, manager, applications laboratory, Sylvania Electric Products, Inc., Salem, Mass.

Slauer presented a demonstration of how infra-red lamps, developed by his company, may be used in kitchen ranges for cooking purposes. He added that his company has made no decision whether it is going into the commercial field with its new product during the present national emergency.

Use of "cheap" dollars..

→ *from Page 46*

no 'OE' dollars to plan with," Ruml added. Long term commitments involving annual amortization will be avoided; leases, for short terms and even at high rates, will be preferred."

It is apparent, he observed, that the simple and obvious questions dealing with capital items will give management under the excess profits tax plenty of scope for imaginative planning.

"Point IV enterprises provide a great area in which management can venture cheap dollars in a way that will strongly support national policy and the general welfare," Ruml said. "True, the time available to plan and execute a one-company 'optional expense' program on the international front is extremely limited. But preliminary explorations can be made for raw materials, designs, and markets that in many cases can be profitably developed even should OE dollars disappear."

Demise of tax law predicted

The excess profits tax had few friends among those in Congress or in the Executive branch who were knowledgeable about tax matters, Ruml said. It is unlikely, he added, that the measure will be re-enacted in 1953.

PLANT TESTING Gives Us a GOOD LOOK!

5 OTHER GOOD REASONS FOR USING PORCELFRIT

1. **FEWER REJECTS**—Rejects cut your profits and PORCELFRIT cuts rejects to a minimum.

2. **SERVICE ENGINEERING**—Our service engineers are available to make sure that PORCELFRIT works right for your product . . . you take no chances.

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4. **IMPROVED SMELTING** — Ing-Rich uses unquestionably the world's finest smelting method, the result of exhaustive research and experiment.

5. **PLANT TESTING**—Since 1901 Ing-Rich has pioneered in porcelain enameling. We have learned a lot in that time—and our customers profit by it.

How do we *know* PORCELFRIT gives superb results? Because we use it ourselves . . . just as you use it . . . right in our own job enameling department. Naturally, constant research and careful laboratory control play their parts—but actual use is the payoff. That's where we get a GOOD look . . . that's where any errors are corrected *before* you get PORCELFRIT.

Realize how much that's worth to you? No guesswork, no gamble. When you specify PORCELFRIT you get dependable, *plant-tested* frit. You've got enough other things to worry about; toss your frit worries away by always buying PORCELFRIT.

ING·RICH
PORCELFRIT
"The Plant Tested Frit"

INGRAM-RICHARDSON, INC.
OFFICES, LABORATORY AND PLANT
FRANKFORT, INDIANA

How modern stamping techniques can help conversion

(Continued from Page 26)

If the part is strained or thinned unduly in any operation, it is on the road to the scrap pile. Such an insignificant thing as bottoming a draw die too hard can crystalize the metal and lead to ultimate fracture. Even a dull blanking die that chews the edge of the blank may cause blank crystallization that invites a fracture.

The softness of a drawing punch or die may lead to galling of both stamping and die. Wrinkling of stampings must never be allowed to start for it will prevent drawing in subsequent operations. . .

Cold extrusions

Our military program must rely on constant research and development to get there "fustest with the mostest". One new process has emerged as the result of military necessity, that also has many civilian applications. It has been termed as the process of "cold extrusion" *(see "Cold Extrusion of Steel," by Col. Merle Davis, April 1950* finish).

It has long been used in the softer metal fields for making parts, such as tooth paste tubes and kindred items. However, in recent years steel has been found to be much more plastic in its cold state than was originally realized.

This new process has opened the door to the conversion of parts that have considerable variation in cross sectional area, a class of parts that had previously resisted conversion.

At this period of its development, extrusion is divided into two classes. There is both forward and backward extrusion. When the metal being extruded flows ahead of the punch and in the same direction it is called "forward extrusion". When extruded metal flows in the opposite direction to the punch it is called "backward extrusion".

HOW MANY TIMES MUST YOU BE TOLD TO KEEP FROM UNDER A LOAD?

Extrusion opens new doors

In extrusion, the stresses are largely of a compressive nature. By this process a disc or a slug may be forced to flow into a predetermined cavity under compression. This movement of metal must be confined to areas necessary to fill out the parts in process. Any unnecessary overflow will dissipate the built-in pressure so essential to filling out the remote recesses.

Much of the progress to date, at least that which has been disclosed, centers around circular parts. Die holders must be made massive to rigidly support the steel inserts. Parts must be properly coated to reduce as much friction in the process as possible. This will greatly lengthen die steel life.

Extrusion requires fewer operations. Extrusion can produce intricate shapes even with close tolerances. Extrusion minimizes machining. Extrusion produces a finish equivalent to the die finish. Extrusion improves the structural qualities of parts. Extrusion creates the built-in strength.

Another characteristic of this development is the ease in cold extruding up to SAE 1030 carbon steel when spherodize annealing has brought about proper grain size.

Extrusion permits the conversion of many new items that have been thought impractical with previous processes. Necessity again has led to improvement, yet as of now, there is still much to be learned of this promising development.

Practical conversion examples

Accompanying this article are illustrations showing typical conversion examples. Those illustrated represent with but one exception examples that are neither silver or copper brazed. Many were selected for their simplicity and are therefore not as colorful as brazed conversions.

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